Prepared	Subject responsible	Document no.		
SEA/EBBMP M.Plattner	SEA/EBBX/E	155 34-ASB 150 02 Uen		
Document responsible/Approved / Kontr/Checked		Date	Rev.	File reference
SEA/EBBMP		99-07-15	U	ASB 150 02
		Database reference		
		15534.fm		

ASB 150 02
Facility Description - General

Contents **Page**

1 INTRODUCTION 3
1.1 This document 3
2 FACILITIES. 3
2.1 Definition. 3
2.2 Use 3
2.3 Operation 3
2.4 Capacity 3
2.5 Limitations. 3
2.6 Programming 4
2.7 Equipment. 4
3 GENERAL 4
4 TELEPHONE TYPES. 5
4.1 GENERAL. 5
4.2 BASIC Telephone, DBC 210. 5
4.3 ECONOMYplus Telephone, DBC 211 5
4.4 STANDARD Telephone, DBC 212 6
4.5 EXECUTIVE Telephone, DBC 213 6
4.6 Operator’s Console, DBC 214 7
4.7 Portable Telephone, DT 288 7
4.8 Portable Telephone, DT 368 7
4.9 Ericsson Analogue Telephones 8
4.10 Other Analogue Telephone 8
5 ASB 150 02 - FEATURES 12
5.1 Digital System Telephone 12
5.2 Analogue and old digital system telephones 15
6 FUNCTIONALITY OF ASB 150 02 WITH / WITHOUT CONNECTED FECU 18
7 RELATION BETWEEN FEATURES AND RELEASES 23
7.1 Software 23
7.2 Applications 24

7.3 Hardware 25

7.4 Terminals 25

8 FEATURE CODES 26

9 TONE MESSAGES. 27

10 RING SIGNALS 27

11 LAMP MESSAGES 27

12 DISPLAY MESSAGES 28

12.1 EXECUTIVE Telephone, DBC 213 28

12.2 STANDARD Telephone, DBC 212 and DBC 631 28

12.3 EXECUTIVE Telephone, DBC 662 28

12.4 EXECUTIVE Telephone, DBC 753 28

12.5 OPERATOR’s Console, DBC 214 29

12.6 OPERATOR’s Console, DBC 663 and DBC 754 29

13 SYSTEM PROGRAMMING 29

13.1 Prerequisites for system programming 30

14 INDIVIDUAL PROGRAMMING 33

14.1 General 33

14.2 Programmable keys 33

15 COMMAND LIST 39

1 INTRODUCTION

1.1 This document

This document, together with a number of subdocuments, describes all functions in ASB 150 02.

2 FACILITIES

Each subdocument, xxx/155 34-ASB 150 02 Uen etc., describes the facilities in alphabetical order.

2.1 Definition

A concise description of the facility is provided under this heading.

2.2 Use

Under this heading is stated in which way the user can utilise the facility.

2.3 Operation

Under this heading is described how the facility is operated from the following current telephones types:

Analogue Telephone	
BASIC Telephone	DBC 210
ECONOMY*plus* Telephone	DBC 211
STANDARD Telephone	DBC 212
EXECUTIVE Telephone	DBC 213

If operation is different for the various telephones the procedures will be described under different subheadings.

The Operator's Console, DBC 214, is described seperately in the Facility Description "OPERATOR, document 380/155 34-ASB 150 02 Uen.

NOTE: For operation of older telephones mentioned under "Other ASB 150 02 telephones" and "ASB150 02 Telephones" in this document, see the User's Guide for the individual telephone type.

2.4 Capacity

Capacity restrictions (if any) for the facility are described under this heading.

For example it is possible to state here the number of groups for a certain function or the maximum number of extensions that can be members of a certain group.

2.5 Limitations

Under this heading is stated whether the facility has functional limitations, for example whether it is non applicable with regard to certain traffic cases.

2.6 Programming

Here are the programming commands stated that must be executed to access the facility.

The programming commands are to be executed in the sequence stated.

Each command is presented with a header and command number in accordance with the following pattern:

0301
Define key

After the command number has been entered the display shows an image with the following pattern:

```
10 Jul 14:40   +15°
FUNCTION OF KEY       0301 xxxx  y    zz
 backward  forward     c/i      return
```

The second row shows, from the left:

- Explanatory text for the command
- 0301 Command number
- xxxx Fields to be completed in accordance
  y, zz with command description

The programming procedures are described in section SYSTEM PROGRAMMING in this document.

Certain functions, for example the function of the telephone's keys, can be programmed by the user. This is called and described in section INDIVIDUAL PROGRAMMING in this document.

NOTE: Programming from other types of system telephones may show a little different layouts depending upon the display type.

For detailed information see section SYSTEM PROGRAMMING in this document.

2.7 Equipment

Under this heading is stated whether any special printed board assembly or other hardware needs to be connected in order to access the facility.

3 GENERAL

The FACILITY DESCRIPTION describes all facilities in ASB 150 02 Release R10.

Each facility is described in accordance with a common pattern with the same headings used in all descriptions.

The documents also embrace the description of common functions and types of telephone.

4 TELEPHONE TYPES

4.1 GENERAL

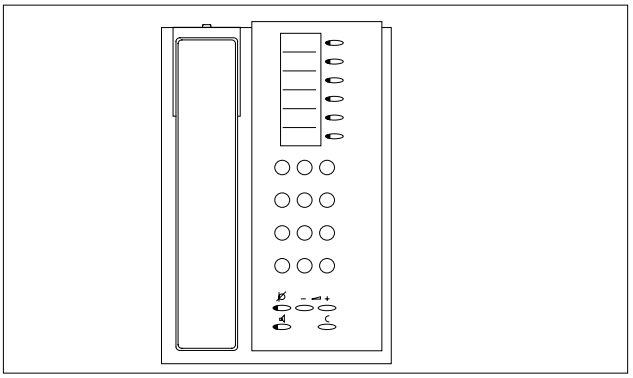
Digital proprietary system telephones, DECT cordless telephones and analogue standard telephones can be connected to the exchange.

A special OPERATOR's Console exists for OPERATORs.

Digital SYSTEM telephones

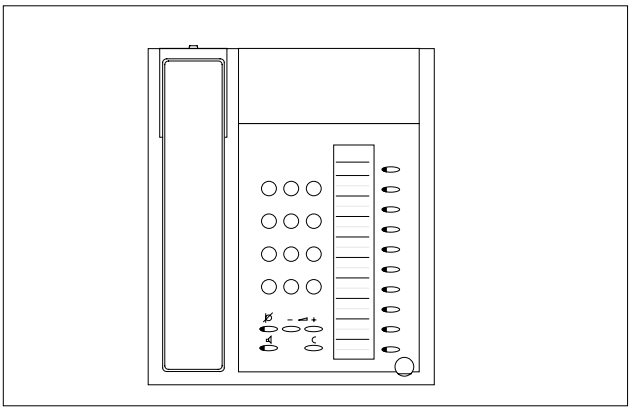
4.2 BASIC Telephone, DBC 210

- Standard keyset
- 3 permanent function keys
- 5 permanent function keys with lamp
- 3 free programmable keys
- Loudspeaker



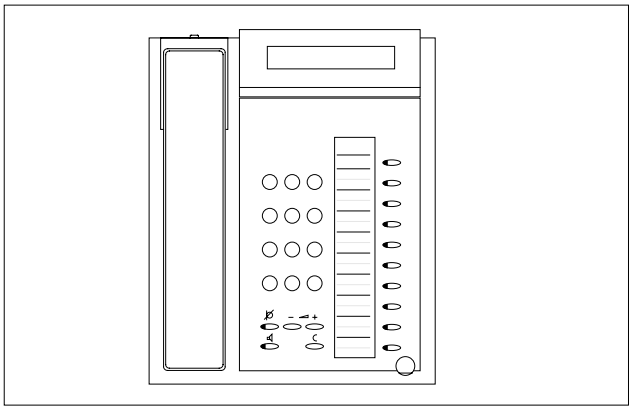
4.3 ECONOMY*plus* Telephone, DBC 211

- Metropolitan keyset
- Two line access
- 3 permanent function keys
- 8 permanent function keys with lamp
- 4 free programmable keys
- Loudspeaker
- Group listening
- Full hands-free operation



4.4 STANDARD Telephone, DBC 212

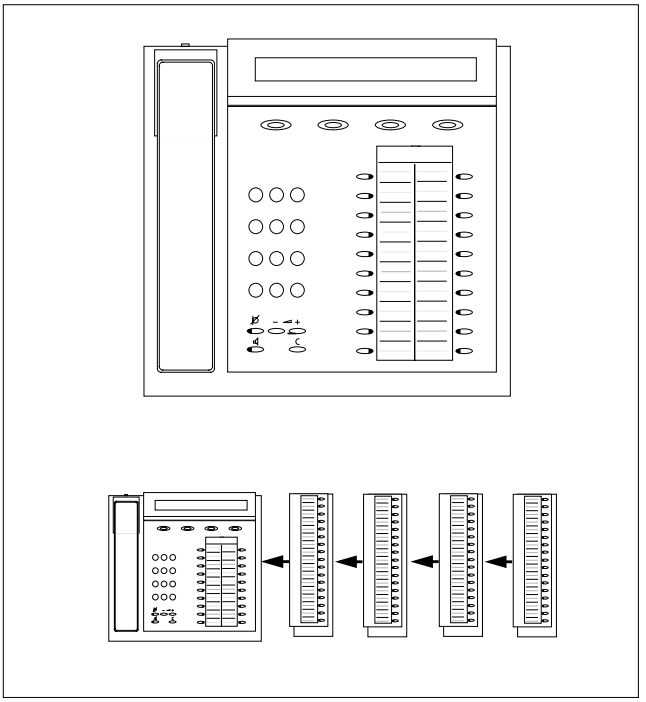
- Metropolitan keyset
- Two line access
- 3 permanent function keys
- 8 permanent function keys with lamp
- 4 free programmable keys
- 2*20 character alphanumerical display
- Loudspeaker, Group listening
- Full hands-free operation



4.5 EXECUTIVE Telephone, DBC 213

- Metropolitan keyset
- Two line access
- 3 permanent function keys
- 8 permanent function keys with lamp
- 14 free programmable keys
- 3*40 character alphanumerical display
- 4 menu keys
- Loudspeaker, Group listening
- Full hands-free operation

Up to 2 KEY PANELS of type DBY 409 01 or up to 4 key panels of type DBY 409 02 may be connected to the EXECUTIVE telephone.
Each KEY PANEL has 17 programmable keys with lamps. Each KEY PANEL can be snapped on to the EXECUTIVE telephone. A separate power supply for the key panels DBY 409 02 is necessary. The key panels DBY 409 02 must not be mixed with the key panel DBY 409 01 !
For more informations concerning the key panels, see document 1531-DBC211 01 Uen.

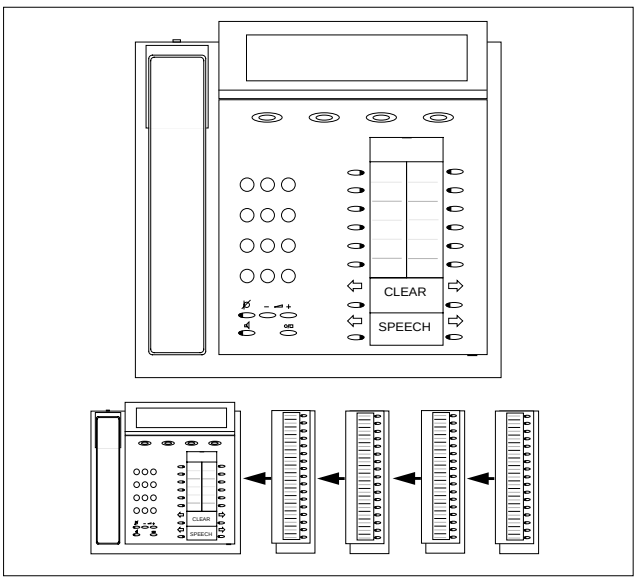


4.6 Operator's Console, DBC 214

This is a telephone that has been specially adapted for OPERATOR requirements. The console has special keys for the various OPERATOR functions as well as a 5*40 character display.
The OPERATOR's Console has the following keys:

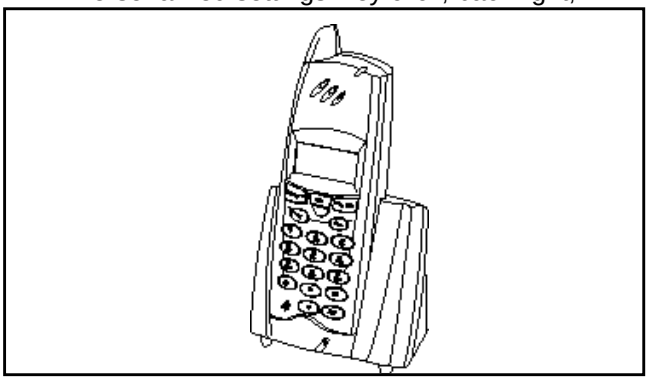
- Metropolitan keyset
- Two line access
- 3 permanent function keys
- 15 permanent function keys with lamp
- 3 free programmable keys
- 5*40 character alphanumerical display
- 4 menu keys
- Loudspeaker, Group listening
- Full hands-free operation

Up to 2 KEY PANELS of type DBY 409 01 or up to 4 key panels of type DBY 409 02 may be connected to the OPERATOR's Console.
Each KEY PANEL has 17 programmable keys with lamps. Each KEY PANEL can be snapped on to the OPERATOR's Console. A separate power supply for the key panels DBY 409 02 is necessary. The key panels DBY 409 02 must not be mixed with the key panel DBY 409 01 !
For more informations concerning the key panels, see document 1531-DBC214 01 Uen.



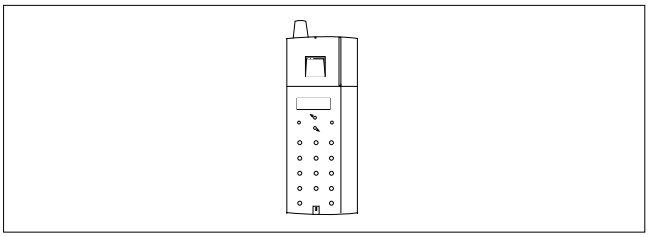
4.7 Portable Telephone, DT 288

- Ericsson look and feel (Yes,No,Clear,Up,Down)
- 2 line display plus icons
- Menu driven user interface
- 100 entries in telephone book
- GAP standard
- including charger for desk stand and wall mounting
- Personalized settings: key click, back light,...



4.8 Portable Telephone, DT 368

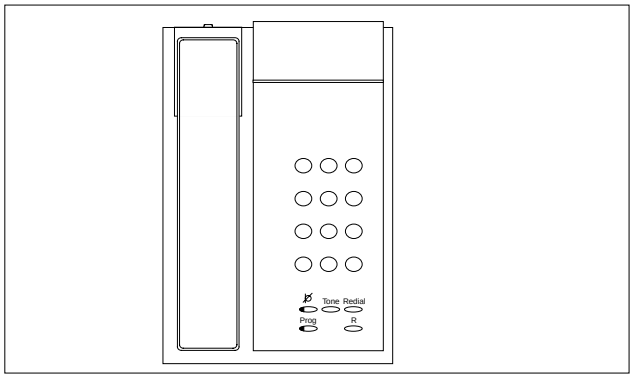
- Small, lightweight with standard key pad
- 6 function keys, 10 number memory
- 10 hours speech time and 50 hours stand-by
- LCD alphanumeric/symbol display
- menu keys & time and date display
- Alphanumeric number memory for up to 1,000 names and numbers
- CTR22 (GAP) compliant
- WhoCalled function & LastDialled list



4.9 Ericsson Analogue Telephones

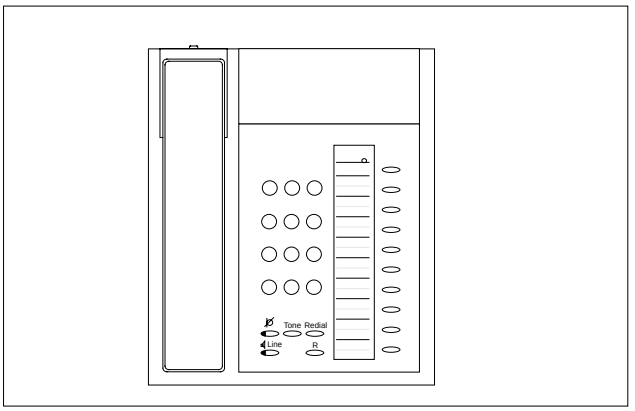
Analogue Telephone Basic, Dialog 3105

- Switchable DTMF signalling/decadic pulsing
- Last number redial
- Temporary switch to DTMF signalling
- Tone ringer & Volume control
- Switchable R function, earth/time break
- Mute button for handset microphone
- 4-Hour memory retention without batteries
- Wall mounting possible



Analogue Telephone Medium, Dialog 3145
Analogue Telephone Hotel, Dialog 3146

- Switchable DTMF signalling/decadic pulsing
- Last number redial
- Temporary switch to DTMF signalling
- Tone ringer
- Switchable R function, earth/time break
- Volume control
- Mute button for handset microphone
- 4-Hour memory retention without batteries
- Wall mounting possible
- 9 dial-by-name buttons
- Program button
- Monitoring speaking
- Line and speaker on/off indication with LED
- Message waiting LED



The Dialog 3146 Hotel telephone supports the same functions as the Medium (Dialog 3145) Model with the addition of:

- a/b Dataport for the connection of laptop-modems, faxes etc.
- Fixed program buttons for the Hotel environment

4.10 Other Analogue Telephone

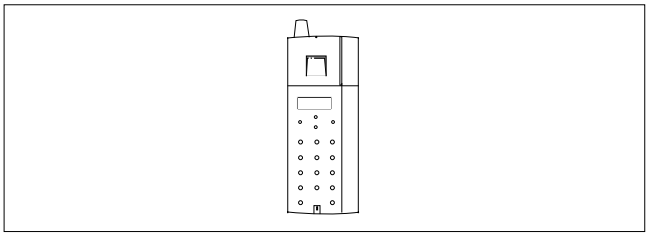
Any type of analogue telephone may be connected.

4.11 Telephones delivered in previous releases of ASB 150 02

The folllowing types of system telephones may also be connected to ASB 150 02:

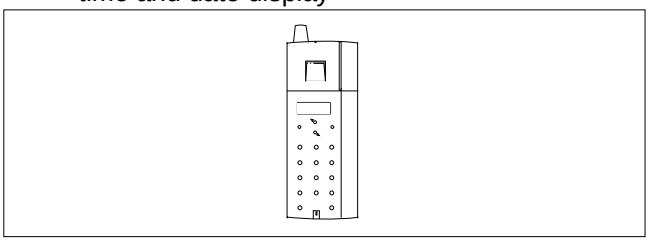
Portable Telephone, DT 310

- Small, lightweight with standard key pad
- 6 function keys
- 9 hours speech time and 45 hours stand-by
- 10 number memory
- LCD symbol display
- Volume control
- Intelligent charging control



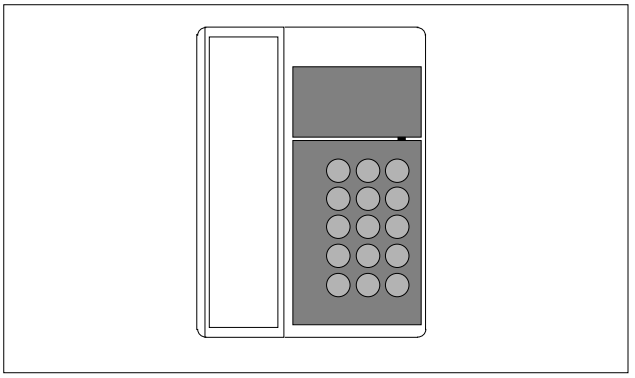
Portable Telephone, DT 360

- Small, lightweight with standard key pad
- 6 function keys, 10 number memory
- 9 hours speech time and 45 hours stand-by
- LCD alphanumeric/symbol display
- User guidance via menu keys
- Alphanumeric number memory for up to 1,000 names and numbers
- WhoCalled function (20 entries)
- LastDialled list (20 entries)
- time and date display



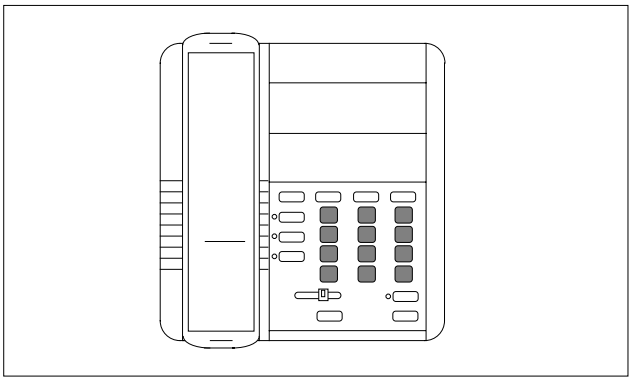
BASIC Telephone, DBC 199

- Standard keyset
- 2 permanent function keys
- 1 permanent function key with lamp



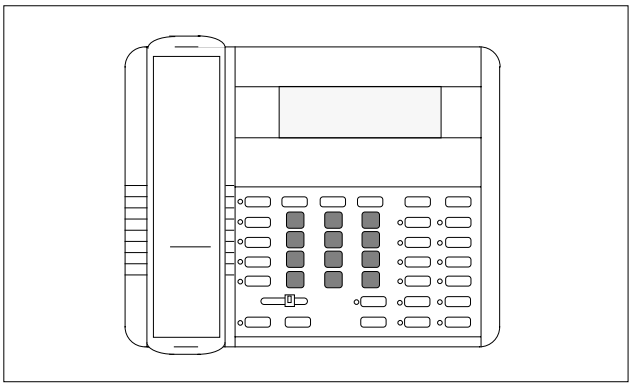
ECONOMY Telephone, DBC 601

- Standard keyset
- 5 permanent function keys
- 4 permanent function keys with lamp



STANDARD Telephone, DBC 631

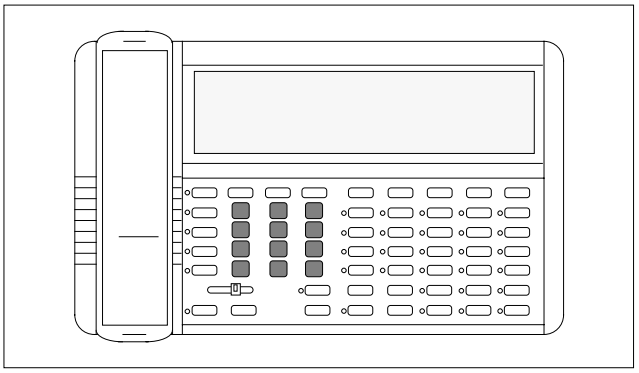
- Standard keyset
- 7 permanent function keys
- 9 permanent function keys with lamp
- 10 programmable keys
- 2*20 character alphanumerical display
- Monitoring loudspeaker



OPERATOR's Console, DBC 663

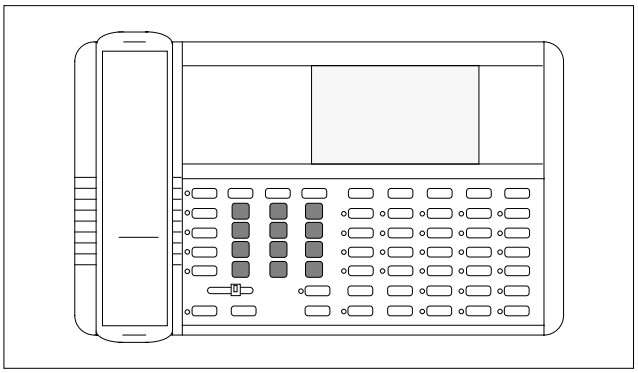
This is a telephone that has been specially adapted for OPERATOR requirements.

- Standard keyset
- 15 permanent function-, 20 programmable keys
- 8 permanent function keys with lamp
- 4*40 character alphanumerical display
- 4 menu keys, Loudspeaker



EXECUTIVE Telephone, DBC 662

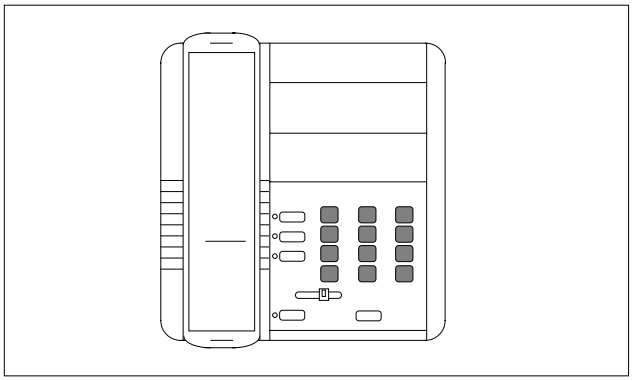
- Standard keyset
- 9 permanent function-, 26 programmable keys
- 8 permanent function keys with lamp
- 4*20 character alphanumerical display
- 4 menu keys, Full handsfree operation



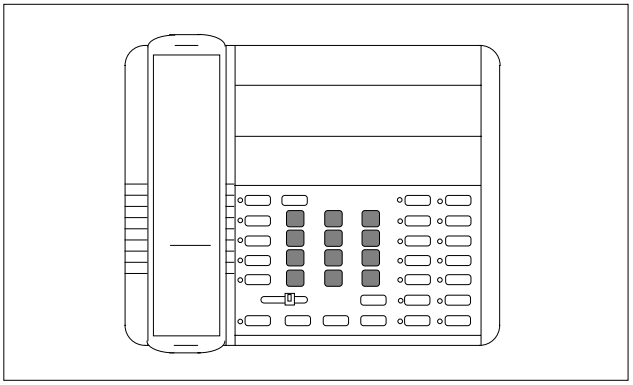
4.12 ASB 150 01 telephones

Following telephones may be connected to ASB 150 02 by means of the ELU-C board.

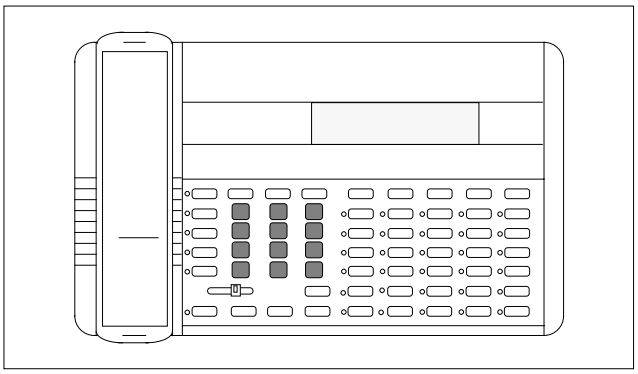
ECONOMY Telephone, DBC 751



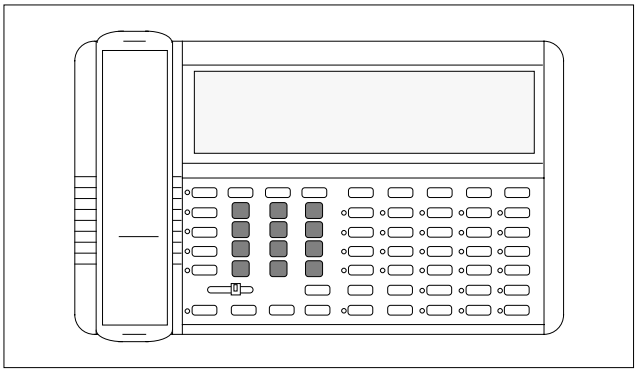
STANDARD Telephone, DBC 752 and DBC 755



EXECUTIVE Telephone, DBC 753



OPERATOR's Console, DBC 754



5 ASB 150 02 - FEATURES

5.1 Digital System Telephone

Feature	DBC 210	DBC 211	DBC 212	DBC 213	DBC 213 + 2 DSS	DBC 213 + 4 DSS	DBC 214	DBC 214 + 2 DSS	DBC 214 + 4 DSS	DT 310	DT 368	DT 288
Abbreviated no. dial.-common numbers	X	X	X	X	X	X	X	X	X	X	X	X
Abbreviated no. dial.-individual numbers via key pad	10	10	10							10	10	10
Abbreviated no. dial.-individual numbers via prog. key		4	4	14	48	82	3	37	71			
Account numbers	X	X	X	X	X	X	X	X	X	X	X	X
ACD agent-tel.		X	X	X	X	X						
ACD supervisor-tel.			*	X	X	X						
Alarm function	X	X	X	X	X	X	X	X	X			
Authority code	X	X	X	X	X	X	X	X	X	X	X	X
Automatic callback	X	X	X	X	X	X				X	X	X
Background music	X	X	X	X	X	X	X	X	X			
Automated Attendant	X	X	X	X	X	X	X	X	X	X	X	X
Call metering			*	X	X	X	*	*	*			
Call p. up - common	X	X	X	X	X	X	X	X	X			
Call p. up - ext. group	X	X	X	X	X	X	X	X	X	X	X	X
Call p. up - individual	X	X	X	X	X	X	X	X	X	X	X	X
Call waiting indic.	X	X	X	X	X	X	X	X	X	X	X	X
Camp on	X	X	X	X	X	X	X	X	X	X	X	X
Clock and diary			X	X	X	X	X	X	X			
Common bell	X	X	X	X	X	X	+	+	+	X	X	X
Conference	X	X	X	X	X	X	*	*	*	X	X	X
Conn. state mess.	X	X	X	X	X	X	X	X	X	X	X	X

Feature	DBC 210	DBC 211	DBC 212	DBC 213	DBC 213 + 2 DSS	DBC 213 + 4 DSS	DBC 214	DBC 214 + 2 DSS	DBC 214 + 4 DSS	DT 310	DT 368	DT 288
CTI (Computer Telephony Integr.)	X	X	X	X	X	X				X	X	X
CTI for Automated Attendant	X	X	X	X	X	X	X	X	X	X	X	X
Desk Top Manager	X	X	X	X	X	X						
DISA	X	X	X	X	X	X	X	X	X	X	X	X
Diversion direct	X	X	X	X	X	X	#	#	#	X	X	X
Diversion on busy	X	X	X	X	X	X				X	X	X
Div. on no reply	X	X	X	X	X	X	#	#	#	X	X	X
Doorph. (answering)	X	X	X	X	X	X	X	X	X	X	X	X
Fault indication				X	X	X	X	X	X			
Follow me	X	X	X	X	X	X				X	X	X
Group hunting	X	X	X	X	X	X	X	X	X	X	X	X
Hot line	X	X	X	X	X	X				X	X	X
Hotel guest room tel.	X	X	X							X	X	X
Hotel reception tel.				X	X	X	X	X	X			
Hotel service tel.			X	X	X	X						
Immediate answer		X	X	X	X	X	X	X	X			
Information	X	X	X	X	X	X	X	X	X	X	X	X
Inquiry	X	X	X	X	X	X	X	X	X	X	X	X
Integrated Cordless										X	X	X
Intercom	*	X	X	X	X	X	X	X	X			
Intrusion	X	X	X	X	X	X	X	X	X	X	X	X
ISDN Caller List			X	X	X	X						
ISDN Calling Line Id.			X	X	X	X	X	X	X		X	X
ISDN Connected Line Identification			X	X	X	X	X	X	X		X	X
Key system function	X	X	X	X	X	X	X	X	X			
Last ext.numb.redial	X	X	X	X	X	X	X	X	X	X	X	X
Least Cost Routing	X	X	X	X	X	X	X	X	X	X	X	X
Loudspeaker paging	X	X	X	X	X	X	X	X	X			
Mailbox-sys. comm.	X	X	X	X	X	X	X	X	X			

Feature	DBC 210	DBC 211	DBC 212	DBC 213	DBC 213 + 2 DSS	DBC 213 + 4 DSS	DBC 214	DBC 214 + 2 DSS	DBC 214 + 4 DSS	DT 310	DT 368	DT 288
Mailbox-sys. indiv.	X	X	X	X	X	X				X	X	X
Message-sys. voice	X	X	X	X	X	X	X	X	X	X	X	X
Message-s. call me	X	X	X	X	X	X	X	X	X	X	X	X
Message-sys. text				X	X	X	X	X	X			
Music on hold	X	X	X	X	X	X	X	X	X	X	X	X
Name selection	X	X	X	X	X	X	X	X	X			
Night service	*	X	X	X	X	X	X	X	X	*	*	*
Paging	X	X	X	X	X	X	X	X	X	X	X	X
Park.for com.access	X	X	X	X	X	X						
Parking individual	X	X	X	X	X	X	X	X	X	X	X	X
Private trunk line	X	X	X	X	X	X	X	X	X			
Programmable and fixed keys	3	4	4	14	48	82	3	37	71			
Refer back	X	X	X	X	X	X	X	X	X	X	X	X
Reminder service	X	X	X	X	X	X	X	X	X	X	X	X
Saved ext. no. redial	X	X	X	X	X	X	X	X	X			
Secretary function	*	X	X	X	X	X	X	X	X			
Supervision	X	X	X	X	X	X	X	X	X			
Tandem - Slave	X	X	X	X	X	X				X	X	X
Tandem - Master	X	X	X	X	X	X				*	*	*
Telephone directory				X	X	X	X	X	X		*	*
Trunk line key	X	X	X	X	X	X	X	X	X			
Voice mail box, external	X	X	X	X	X	X	X	X	X	X	X	X

* available with limitations

^ available if you use the feature: "Abbreviated number dialling - common numbers"

+ can not be programmed as Common bell, but only answer calls

corresponds to the feature "Offduty position"

5.2 Analogue and old digital system telephones

Feature	Analogue rotary	Analogue DTMF	DBC 751	DBC 755	DBC 753	DBC 754	DBC 199	DBC 601	DBC 631	DBC 662	DBC 663	DT 360
Abbreviated no. dial.- common numbers	X	X	X	X	X	X	X	X	X	X	X	X
Abbreviated no. dial.- individual numbers via key pad	^	10	10				10	10				10
Abbreviated no. dial.- individual numbers via prog. key				10	30	20			10	30	20	
Account numbers		X	X	X	X	X	X	X	X	X	X	X
ACD agent-tel.				X	X				X	X		
ACD supervisor-tel.					X				X	X		
Alarm function				*	*	*			*	*	*	
Authority code		X	X	X	X	X	X	X	X	X	X	X
Automatic callback	X	X	X	X	X		X	X	X	X		X
Background music			X	X	X				X	X		
Automated Attendant		X	X	X	X	X	X	X	X	X	X	X
Call metering					*	*			*	X	*	
Call p. up-common				X	X	X			X	X	X	
Call p. up- ext. group	X	X	X	X	X	X	X	X	X	X	X	X
Call p. up- individual	X	X	X	X	X	X	X	X	X	X	X	X
Call waiting indic.	X	X	X	X	X	X	X	X	X	X	X	X
Camp on	X	X	X	X	X	X	X	X	X	X	X	X
Clock and diary					X	X			X	X	X	
Common bell	X	X	X	X	X	+	X	X	X	X	+	X
Conference	X	X	X	X	X	*	X	X	X	X	*	X
Conn. state mess.	X	X	X	X	X	X	X	X	X	X	X	X
CTI (Computer Telephony Integr.)	*	X	X	X	X		X	X	X	X		X
CTI for Automated Attendant		X	X	X	X	X	X	X	X	X	X	X

Feature	Analogue rotary	Analogue DTMF	DBC 751	DBC 755	DBC 753	DBC 754	DBC 199	DBC 601	DBC 631	DBC 662	DBC 663	DT 360
Desk Top Manager							X	X	X	X		
DISA		X	X	X	X	X	X	X	X	X	X	X
Diversion direct	^	X	X	X	X	#	X	X	X	X	#	X
Diversion on busy	X	X	X	X	X		X	X	X	X		X
Div. on no reply	X	X	X	X	X	#	X	X	X	X	#	X
Doorph. (answering)	X	X	X	X	X	X	X	X	X	X	X	X
Fault indication						X				X	X	
Follow me	^	X	X	X	X		X	X	X	X		X
Group hunting	X	X	X	X	X	X	X	X	X	X	X	X
Hot line	X	X	X	X	X		X	X	X	X		X
Hotel guest room tel.	X	X	X				X	X				X
Hotel reception tel.					X	X				X	X	
Hotel service tel.					X				X	X		
Immediate answer				X	X					X		
Information	^	X	X	X	X	X	X	X	X	X	X	X
Inquiry	X	X	X	X	X	X	X	X	X	X	X	X
Integrated Cordless												X
Intercom				X	X	*			X	X	*	
Intrusion	X	X	X	X	X	X	X	X	X	X	X	X
ISDN Caller List					X					X		
ISDN Calling Line Id.					X	X				X	X	X
ISDN Connected Line Identification					X	X				X	X	X
Key system function				X	X	X			X	X	X	
Last ext.numb.redial	^	X	X	X	X	X	X	X	X	X	X	X
Least Cost Routing	X	X	X	X	X	X	X	X	X	X	X	X
Loudspeaker paging			*	X	X	*			X	X	*	
Mailbox-sys. comm.			*	X	X	X	*	*	X	X	X	
Mailbox-sys. indiv.		X	X	X	X	X	X	X	X	X	X	X
Message-sys. voice		X	X	X	X	X	X	X	X	X	X	X

Feature	Analogue rotary	Analogue DTMF	DBC 751	DBC 755	DBC 753	DBC 754	DBC 199	DBC 601	DBC 631	DBC 662	DBC 663	DT 360
Message-s. call me		X	X	X	X	X	X	X	X	X	X	X
Message-sys. text					X	X				X	X	
Music on hold	X	X	X	X	X	X	X	X	X	X	X	X
Name selection				X	X	X			X	X	X	
Night service	^	*	*	X	X	X	*	*	X	X	X	*
Paging	^	X	X	X	X	X	X	X	X	X	X	X
Park.for com.access				X	X	X			X	X	X	
Parking individual	X	X	X	X	X	X	X	X	X	X	X	X
Private trunk line				X	X	X			X	X	X	
Programmable and fixed keys				10	30	20			10	30	20	
Refer back	X	X	X	X	X	X	X	X	X	X	X	X
Reminder service		X	X	X	X	X	X	X	X	X	X	X
Saved ext. nr. redial		*	X	X	X	X		X	X	X	X	
Secretary function				X	X					X		
Supervision				X	X	X			X	X	X	
Tandem - Slave	X	X	X	X	X		X	X	X	X		X
Tandem - Master	*	*	*	X	X		*	*	X	X		*
Telephone directory					X	X				X	X	*
Trunk line key				X	X	X			X	X	X	
Voice mail box, external		X	X	X	X	X	X	X	X	X	X	X

* available with limitations

^ available if you use the feature: "Abbreviated number dialling - common numbers"

+ can not be programmed as Common bell, but only answer calls

corresponds to the feature "Offduty position"

6 FUNCTIONALITY OF ASB 150 02 WITH / WITHOUT CONNECTED FECU

Together with the introduction of the ASB 150 02 R9, a software licencing concept was introduced.

Most of the features which are introduced from the Software Release ASB 150 02 R9 upwards can only be enabled by a hardware device, the so called "Feature Enabling Circuit Unit" (FECU), which is connected to the CPU-D4. Each major commercial release (e.g. BusinessPhone 250 / BusinessPhone 50 Version 3, Version 4, ...) has its own FECU series, covering several packages.

BusinessPhone 250 / BusinessPhone 50 - Version 3 (ASB 150 02 R9, R10)

FECU article number: KDUBS 130 06 / x (x = Package 1-10)

Package 1: Basic Fucntions R9, R10
Package 2: Standard digital networking (QSIG + VPN) with max. 32 interfaces
Package 3: Standard digital networking (QSIG + VPN) with unlimited interfaces
Package 4: Full digital networking (QSIG + VPN + UUS) with max. 32 interfaces
Package 5: Full digital networking (QSIG + VPN + UUS) with unlimited trunk interfaces
Package 6: CTI
Package 7: Standard digital networking (QSIG + VPN) with max. 32 trunk interfaces + CTI
Package 8: Standard digital networking (QSIG + VPN) with unlimited trunk interfaces + CTI
Package 9: Full digital networking (QSIG + VPN + UUS) with max. 32 trunk interfaces + CTI
Package 10: Full digital networking (QSIG + VPN + UUS) with unlimited trunk interfaces + CTI

BusinessPhone 250 / BusinessPhone 50 - Version 4 (ASB 150 02 R11)

FECU article number: KDUBS 130 07 / x (x = Package 1-10)

Package 1: Basic Fucntions R11
Package 2: Standard digital networking (QSIG) with 32 interfaces
Package 3: Standard digital networking (QSIG) with unlimited interfaces
Package 4: Full digital networking (QSIG + VPN + UUS) with 32 interfaces
Package 5: Full digital networking (QSIG + VPN + UUS) with unlimited interfaces
Package 6: Full digital networking (QSIG + VPN + UUS) with 4 interfaces + CTI
Package 7: Standard digital networking (QSIG) with 32 interfaces + CTI
Package 8: Standard digital networking (QSIG) with unlimited interfaces + CTI
Package 9: Full digital networking (QSIG + VPN + UUS) with 32 interfaces + CTI
Package 10: Full digital networking (QSIG + VPN + UUS) with unlimited interfaces + CTI

Features which were introduced in a Release earlier than ASB 150 02 R9 are always enabled, and therefore also accessible if no FECU is connected to the CPU-D4. Furthermore fault corrections to existing unprotected features, as well as small feature improvements are always enabled.
Only two features are excluded from this philosophy: These are the "BusinessLink for Novell" and "proprietary CTI Interface", which were introduced in ASB 150 02 R8. To run the "BusinessLink for Novell" and "proprietary CTI Interface" on the system with R9 Software or upwards, the related FECU (see following table) is required.

The Package 1 always represents the new basic functionality of the Release, which is of course also included in all packages with a higher index.
If you upgrade a system to a higher SW-Release, without changing the FECU although the new Release has its own FECU series (separate article number), the system will remain on the same feature level, except for those features that are unprotected.

The following table shows the functionality enabled in ASB 150 02 depending on the connected FECU:

Available FECUs:

KDUBS 103 06 / 1 - 10 (ASB 150 02 R9, R10)
KDUBS 103 07 / 1 - 10 (ASB 150 02 R11)

The entries in the table indicute the minimum Software Release requirement for the respective feature. All features marked with "X" were introduced in a Release earlier than ASB 150 02 R9:

Feature	no FECU (unprotcetd)	FECU KDUBS 130 0x/1	FECU KDUBS 130 0x/2	FECU KDUBS 130 0x/3	FECU KDUBS 130 0x/4	FECU KDUBS 130 0x/5	FECU KDUBS 130 0x/6	FECU KDUBS 130 0x/7	FECU KDUBS 130 0x/8	FECU KDUBS 130 0x/9	FECU KDUBS 130 0x/10
Abbreviated no. dial.- common numbers	X										
Abbreviated no. dial.- individual numbers via key pad		R9	R9	R9	R9	R9	R9	R9	R9	R9	R9
Abbreviated no. dial.- individual numbers via prog. key	X										
Account numbers	X										
ACD Group	X										
ACD Agent &Supervisor	X										
ACD-Display clerical time		R9	R9	R9	R9	R9	R9	R9	R9	R9	R9
ACD - Fixed clerical time with clerical key		R9	R9	R9	R9	R9	R9	R9	R9	R9	R9
ACD - Monitoring clerical timeouts		R9	R9	R9	R9	R9	R9	R9	R9	R9	R9
ACD - Multiple call codes		R9	R9	R9	R9	R9	R9	R9	R9	R9	R9
Alarm function	X										
Authority code	X										
Automatic callback	X										
Background music	X										
Automated Attendant	X										
Call metering	X										
Call metering - Austria		R11	R11	R11	R11	R11	R11	R11	R11	R11	R11
Call p. up - common	X										
Call p. up - ext. group	X										
Call p. up - individual	X										
Call waiting indic.	X										
Camp on	X										
Clock and diary	X										

Feature	no FECU (unprotcetd)	FECU KDUBS 130 0x/1	FECU KDUBS 130 0x/2	FECU KDUBS 130 0x/3	FECU KDUBS 130 0x/4	FECU KDUBS 130 0x/5	FECU KDUBS 130 0x/6	FECU KDUBS 130 0x/7	FECU KDUBS 130 0x/8	FECU KDUBS 130 0x/9	FECU KDUBS 130 0x/10
Common bell	X										
Conference	X										
Conn. state mess.	X										
CTI - proprietary CTI Interf. *							R9	R9	R9	R9	R9
CTI - BusinessLink for Novell *							R9	R9	R9	R9	R9
CTI - BusinessLink for Windows NT							R10	R10	R10	R10	R10
CTI - BusinessLink for Win NT - only Support of OWS		R10	R10	R10	R10	R10	R10	R10	R10	R10	R10
CTI groups =< 8 *							R9	R9	R9	R9	R9
CTI groups =< 16							R11	R11	R11	R11	R11
CTI - Enhanced CIL func.							R10	R10	R10	R10	R10
Desk Top Manager	X										
DISA	X										
Diversion direct	X										
Diversion on busy	X										
Div. on no reply	X										
Doorph. (answering)	X										
DTMF tones	X										
DTMF tones at inc. calls	R9										
Fault indication	X										
Fax extension	R9										
Fictive numbers (<16)	X										
Fictive numbers (<1000)		R11	R11	R11	R11	R11	R11	R11	R11	R11	R11
Follow me	X										
Group hunting	X										
Hot line	X										
Hotel facilities	X										
Immediate answer	X										
Information via Info-key	X										
Information via keypad		R9	R9	R9	R9	R9	R9	R9	R9	R9	R9

Feature	no FECU (unprotcetd)	FECU KDUBS 130 0x/1	FECU KDUBS 130 0x/2	FECU KDUBS 130 0x/3	FECU KDUBS 130 0x/4	FECU KDUBS 130 0x/5	FECU KDUBS 130 0x/6	FECU KDUBS 130 0x/7	FECU KDUBS 130 0x/8	FECU KDUBS 130 0x/9	FECU KDUBS 130 0x/10
Inquiry	X										
Integrated Cordless - A protocol	X										
Integrated Cordless - GAP protocol		R10	R10	R10	R10	R10	R10	R10	R10	R10	R10
Intercom	X										
Intrusion	X										
ISDN BA & PRA	X										
ISDN S-interface	X										
ISDN Caller List		R10	R10	R10	R10	R10	R10	R10	R10	R10	R10
ISDN DDI, AOC	X										
ISDN CLIP, COLP	X										
ISDN CLIR, COLR	X										
ISDN - CLIR override		R10	R10	R10	R10	R10	R10	R10	R10	R10	R10
ISDN MCID, MSN, SUB	X										
ISDN - Point to MultiPoint		R11	R11	R11	R11	R11	R11	R11	R11	R11	R11
Key system function	X										
Last ext.numb.redial	X										
Least Cost Routing	X										
Loudspeaker paging	X										
Mailbox-sys. comm.	X										
Mailbox-sys. indiv.	X										
Mailbox-sys. - individual greeting		R11	R11	R11	R11	R11	R11	R11	R11	R11	R11
Message-sys. voice	X										
Message-s. call me	X										
Message-sys. text	X										
Music on hold	X										
Music on hold- integrated		R11	R11	R11	R11	R11	R11	R11	R11	R11	R11
Name selection	X										
Networking - Tie line traffic via anal. Trunks	X										
Networking - VPN service from PSTN	X										

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
		155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved	Kontr/Checked	Datum/Date	Rev / Tillhör/Referens-File/Reference
		99-07-15	U

Feature	no FECU (unprotcetd)	FECU KDUBS 130 0x/1	FECU KDUBS 130 0x/2	FECU KDUBS 130 0x/3	FECU KDUBS 130 0x/4	FECU KDUBS 130 0x/5	FECU KDUBS 130 0x/6	FECU KDUBS 130 0x/7	FECU KDUBS 130 0x/8	FECU KDUBS 130 0x/9	FECU KDUBS 130 0x/10
Networking - digital - with QSIG			R9	R9	R9	R9		R9	R9	R9	R9
Networking - digital - with UUS					R9	R9				R9	R9
Networking - digital - MD 110 BC10 adaptions					R10	R10				R10	R10
Networking - digital - Central. Operator					R11	R11	R11			R11	R11
Night service	X										
O&M - Swapping boards during operation		R10	R10	R10	R10	R10	R10	R10	R10	R10	R10
O&M -Remote upgrading		R10	R10	R10	R10	R10	R10	R10	R10	R10	R10
O&M - Cordless remote programming		R10	R10	R10	R10	R10	R10	R10	R10	R10	R10
Paging	X										
Park.for com.access	X										
Parking individual	X										
Private trunk line	X										
Programmable and fixed keys	X										
Refer back	X										
Register recall in PSTN	R9										
Reminder service	X										
Saved ext. no. redial	X										
Secretary function	X										
Supervision	X										
Tandem - Slave	X										
Tandem - Master	X										
Telephone directory	X										
Testcall for Poland	X										
Trunk line key	X										
Voice mail box, external	X										

X Feature was introduced in a Release earlier than ASB 150 02 R9

* The "proprietary CTI Interface" and "BusinessLink for Novell" were already released in ASB 150 02 R8 and are always enabled on the CPU-D3. In conjunction with the CPU-D4 they require the FECU devices.

7 RELATION BETWEEN FEATURES AND RELEASES

7.1 Software

	implemented	enhanced
A-Number transfer via MFC	R7	-
Abbreviated number dialling - common numbers	R1	R10
Abbreviated number dialling - individual numbers	R1	R10
Account number	R1	R10
ACD-Facilities	R1	R8 / R9
Alarm function	R10	-
Analogue telephone	R1	R11
Answer position(s) for trunks	R1	R8
Authorisation code	R1	-
Automated Attendant	R7	-
Automatic callback - busy extension	R1	R10
Automatic callback - free extension	R6	R10
Automatic callback - trunk/route	R1	R10
Background music	R1	-
Bypass call forwarding	R8	R10
Call Inf. Logging (CIL) function	R1	R10
Call Metering	R1	R4 / R11
Call pick-up - common	R1	-
Call pick-up - extension group	R1	-
Call pick-up - individual	R1	-
Call waiting indication	R1	-
Camp on - incoming ext. traffic	R1	-
Camp on - inquiry	R1	-
Camp on - internal calls	R1	-
Categorisation	R1	-
Clock and diary	R1	-
Common bell	R6	-
Computer Telephony Integration	R8	R10
CTI groups	R8	R10/R11
Conference	R1	-
Connection state message	R1	-
Delayed automatic answer	R8	-
Direct indialling	R1	-
Directory numbers	R1	-
DISA with password control	R7	R11
Diversion direct	R1	R6
Diversion on busy	R1	R6
Diversion on no reply	R1	R6
Doorphone	R7	-
DTMF Tones	R1	R9
External line key	R1	-
Fault indication	R1	-
Fictive number	R1	R11
Follow me	R1	R10
FAX extension	R9	-
Group (PBX)-hunting	R1	-
Hot line	R1	-
Hotel facilities	R1	R7 / R8
Immediate answer	R1	R10
Incoming calls via line 1 or 2	R1	-
Incoming external calls	R1	-
Information	R1	R9
Inquiry	R1	-
Integrated cordless	R8	R10
Intercom	R1	-
Intrusion	R1	-
ISDN facilities	R4	R8 / R11
Key system function	R1	-
Last external number redial	R4	-

implemented enhanced

Least Cost Routing	R5	-
Loudspeaker paging	R1	-
Mailbox system	R7	R11
Message system	R1	R7
Music-on-hold	R1	R8 / R11
Name selection	R1	-
Networking - based on analogue lines	R4	-
Networking VPN service from PSTN	R7	-
Networking- bases on digital lines	R9	R1o/R11
Night service	R1	-
Operator	R1	R9
Outgoing external calls	R1	-
Outgoing calls via line 1, line 2 or inquiry key	R1	-
Paging	R1	-
Parking for common access	R1	-
Parking - individual	R1	-
Private trunk line	R1	-
Programmable and fixed keys	R1	R8
Recall	R1	-
Refer back	R1	-
Reminder service	R1	-
Ring and tone signals	R1	-
Route selection	R1	-
Register recall in PSTN	R9	-
Saved external number redial	R1	-
Secretary function	R1	-
Subsystem	R1	-
Supervision	R1	-
System programming	R1	-
Tandem configuration	R8	-
Telephone directory	R1	R7
Tenant function	R1	-
Text mode	R1	-
Traffic group matrx	R1	-
Transfer	R1	-
Trunk	R1	R10
Trunk call discrimination (TCD)	R1	-
Voice mailbox, external	R1	R10
Voice message	R1	R7
Voice mess. before answering	R7	-

7.2 Applications

	introduced	phased out
ACD Management System	R1	R8
ACD PC Graph	R3	R8
Braille Operator	R8	-
BusinessLink for WinNT	R10	-
Call Account Manager	R1	R8
Call Centre Assistant	R10	-
Call Centre Supervisor - Basic	R8	-
Call Centre Supervisor - Standard, Version 1.0	R8	-
Call Centre Supervisor - Standard, Version 2.0	R9	-
Computer Based Training for telephones	R10	-
Configuration Manager	R10	-
Designation Card Manager	R11	-
Desktop Manager	R6	-
Front Desk Manager	R4	R7
PC Operator, Version 1.0	R6	R8
PC Operator, Version 1.1	R7	R9
PC Operator, Version 1.2	R9	-
RASC	R1	-
TAPI	R8	-
TSAPI	R8	-
Operator Suite	R10	-
Voice 4000	R6	R9

7.3 Hardware

		introduced	replaced by
AUX	(ROF 1575119/1)	R1	-
AUX-2	(ROF 1575119/2)	R3	-
AUX-3 (-T)	(ROF 1575119/3)	R4	-
BE12/16	(ROA 2195110/1)	R4	-
BTU-A	(ROF 1575110/1)	R1	-
BTU-A2	(ROF 1575120/1)	R1	-
BTU-B	(ROF 1575121/1)	R6	BTU-B2
BTU-B	(ROF 1575121/3)	R8	BTU-B2
BTU-B2	(ROF 1575121/4)	R9	-
BTU-C	(ROF 1575111/1)	R4	-
BTU-D	(ROF 1575112/1)	R1	-
BTU-E	(ROF 1575113/1)	R4	-
CM12/16	(ROA 2195062/1)	R3	-
CPU-D	(ROF 1575118/1)	R1	CPU-D2
CPU-D2	(ROF 1575118/2)	R3	CPU-D4
CPU-D3	(ROF 1575118/3)	R5	CPU-D4
CPU-D4	(ROF 1575124/1)	R9	-
DIU	(BFY BS 10101/1)	R7	-
ELU-A	(ROF 1575114/1)	R1	-
ELU-A2	(ROF 1575114/2)	R3	-
ELU-C	(ROF 1575115/1)	R3	-
ELU-D	(ROF 1575116/1)	R1	ELU-D3
ELU-D3	(ROF 1575130/1)	R9	-
IC-CU	(ROF 1575128/1)	R8	IC-CU2
IC-CU2	(ROF 1575131/1)	R10	-
IC-LU	(ROF 1575129/1)	R8	-
MFU	(ROF 1575132/1	R11	-
REG	(ROF 1575112/2)	R1	-
PUB3	(ROA 1195108/3)	R1	PUB5
PUB5	(ROA 119 5130)	R8	PUB6
PUB6	(ROA 119 5132)	R9	-
VMU-D	(ROF 1575117/1)	R1	-
VMU-HD	(ROF 1575126/1)	R7	-

7.4 Terminals

		introduced	replaced by
BASIC	DBC 199	R1	DBC 210
BASIC	DBC 210	R9	-
ECONOMY	DBC 751	R3	DBC 601
ECONOMY	DBC 601	R1	DBC 201
ECONOMYplus	DBC 201	R7	DBC 211
ECONOMYplus	DBC 211	R8	-
STANDARD	DBC 755	R3	DBC 631
STANDARD	DBC 631	R1	DBC 202
STANDARD	DBC 202	R3	DBC 212
STANDARD	DBC 212	R8	-
EXECUTIVE	DBC 753	R3	DBC 662
EXECUTIVE	DBC 662	R1	DBC 203
EXECUTIVE	DBC 203	R3	DBC 213
EXECUTIVE	DBC 213	R8	-
OPERATOR	DBC 754	R3	DBC 663
OPERATOR	DBC 663	R1	DBC 214
OPERATOR	DBC 214	R9	-
Portable	DT 310	R8	DT 288
Portable	DT 360	R8	DT 368
Portable	DT 368	R10	-
Portable	DT 288	R11	-
Analogue Basic	Dialog3105	R11	-
Analogue Medium	Dialog3145	R11	-
Analogue Hotel	Dialog3146	R11	-

8 FEATURE CODES

The following list includes all feature codes accessable via the telephone in ASB 150 02:

* 0 0 *	individual programming
* 0 0 #	programming (individual and system)
* 2 1 #	diversion direct - activate
# 2 1 #	diversion direct - deactivate
* 2 3 *	information - activate
# 2 3 #	information - deactivate
* 2 8 #	Tandem function - Logon slave
# 2 8 #	Tandem function - Logoff slave
* 3 1 #	Hotel - check in, check out, room status
* 3 2 #	Hotel - administrative wake up
* 3 2 *	Reminder - activate
# 3 2 #	Reminder - deactivate
* 3 3 *	Hotel - Guest room clean
* 3 4 #	Hotel - blocking of RTR and DID
* 3 9 #	ISDN - Malicious Call Identification
* 4 0 #	ACD - print procedure
* 4 1 #	Call Metering - activation / deactivation of cost indication
* 4 5 #	Call Metering - own accumulated costs
* 4 6 #	Call Metering - cost of last call
* 4 8 #	ISDN - Caller List
* 5 1 *	programm abbreviated number dialling - individual numbers
# 5 1 #	delete abbreviated number dialling - individual numbers
* 5 3 #	Alarm - activation
* 5 4 #	Alarm - deactivation
* 5 5 *	Hotel - wake up order / cancel
* 5 9 #	Message system
* 6 0 *	Bypass diversion and follow me
* 6 5 *	ACD - silent intrusion
* 7 2 #	Authority - activate
# 7 2 *	Authority - deactivate
* 7 2 *	Authority - temp. bypass blocked ext.
# * 7 2	Authority - change password
* 7 3 #	Common Bell - pick-up code
* 7 9 #	Alarm - read out
* 8 #	Night switching - activate / deactivate system
* 8 0 #	Night switching - activate / deactivate, all trunk groups
* 8 1 #	Night switching - activate / deactivate, trunk group 1
* 8 2 #	Night switching - activate / deactivate, trunk group 2
* 8 3 #	Night switching - activate / deactivate, trunk group 3
* 8 4 #	Night switching - activate / deactivate, trunk group 4
* 8 5 #	Night switching - activate / deactivate, trunk group 5
* 8 6 #	Night switching - activate / deactivate, trunk group 6
* 8 7 #	Night switching - activate / deactivate, trunk group 7
* 8 8 #	Night switching - activate / deactivate, trunk group 8
* 8 9 0	Night switching - activate / deactivate, ACD group 1
* 8 9 1	Night switching - activate / deactivate, ACD group 2
* 8 9 2	Night switching - activate / deactivate, ACD group 3
* 8 9 3	Night switching - activate / deactivate, ACD group 4
* 8 9 4	Night switching - activate / deactivate, ACD group 5
* 8 9 5	Night switching - activate / deactivate, ACD group 6
* 8 9 6	Night switching - activate / deactivate, ACD group 7
* 8 9 7	Night switching - activate / deactivate, ACD group 8
* 8 9 8	Night switching - activate / deactivate, all ACD groups
* 9 *	Account codes
* 9 0 #	Maintenance - Instrument test
* 9 1 #	Maintenance - Alarm
* 9 2 *	External voice mail - activate
# 9 2 *	Extenal voice mail - deactivate
* 9 3 #	Maintenance - number of open / restricted trunk accesses
* * *	Last extenal number redial
* * 0 - * * 9	activate Abbreviated number dialling - individual numbers

9 TONE MESSAGES

ASB 150 02 supplies various tone messages as information to users.

As different markets have different requirements with regard both to tone character and also levels and frequencies, there are various configurations of tones.

The following tone messages show the standard tone diagram.

TONE	CHARACTER
Dial tone: System ready to accept digits	———————
Special dial tone: System ready to accept digits but telephone has ongoing diversion	—— —— ——
Ringing tone: Ring signal is sent to called party	—— (repeated after 4 s)
Special ringing tone: Ring signal is sent to Line 2 on system telephone	—— —— (repeated after 4 s)
Busy tone: Called party is busy.	—— —— —— —— ——
Number unobtainable (Vacant) tone: Called number not accessible or is vacant	—— —— ——
Blocking (Congestion) tone: Call cannot be executed due to congestion or because called party is blocked	— — — — — — —
Verification tone: Obtained as verification that ordered facility is accessed	—— —— ——
Intrusion tone: Sent to all parties when an intrusion takes place	—— —— —— ——
Conference tone: Sent to all participants in a conference	—— (repeated after 15 s)

10 RING SIGNALS

ASB 150 02 uses three different ring signals to inform the called party of the origin of the call.
Like tone signals, ring signals are market dependent.

The following ring signals are obtained when the ASB 150 02 system is started for the first time.

RINGSIGNAL	CHARACTER
Internal ringing signal	—— (repeated after 4 s)
External ringing signal	– – (repeated after 4 s)
Automatic callback s.	– – – – – –

11 LAMP MESSAGES

The system telephones and OPERATOR Console possess lamps that supply information relevant to the state of various traffic functions.
The following lamp messages can be obtained:

SIGNIFICANCE	CHARACTER
Function free	extinguished
Function busy or line occupied by another party	Steady glow
Incoming call	Rapid flashes
Function parked	Slow flashes
Connected traffic function. On a telephone only one key at a time can have this flash signal	Lamp flickers

12 DISPLAY MESSAGES

Telephones with display supplies information concerning name, directory number and status of call partner.

The display is also used when programming individual or system related functions.

Display information show some difference between the various telephones that may be connected.

Below is an overview of the display types:

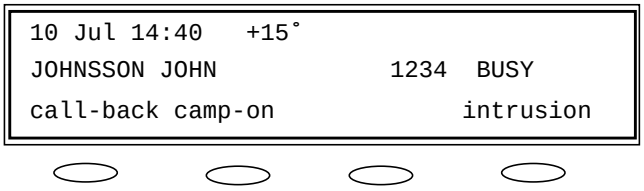
12.1 EXECUTIVE Telephone, DBC 213

This telephone has 3 rows:

Top row shows the date and time and eventually the temperature.

The middle row show the connected party

The bottom row shows the 4 menu functions that are activated by the 4 keys below.

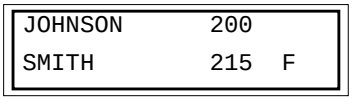


12.2 STANDARD Telephone, DBC 212 and DBC 631

The display has two rows:

Row 1 shows date and time. It is also used for displaying the diverted party in a call.

Row 2 shows called/calling/connected party.



12.3 EXECUTIVE Telephone, DBC 662

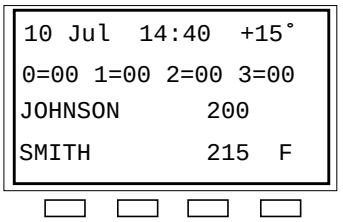
Row 1 shows always date, time and temperature.

Row 2 is reserved for ACD-queue information when the telephone is used as an ACD-agent position.

Row 3 show information only if the called or calling party is diverted.

Row 4 shows the calling or connected party

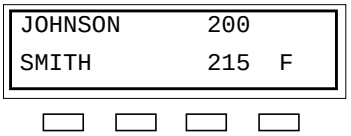
If the **Menu** key is pressed the display show a menu on row4. The menu options can be activated by the four menu keys below the display.



12.4 EXECUTIVE Telephone, DBC 753

The upper row shows information only when the call is diverted.

The lower row shows the calling or connected party.



If the **Menu** key is pressed the display show a menu on row 2. The menu options can be activated by the four menu keys below the display.

12.5 OPERATOR's Console, DBC 214

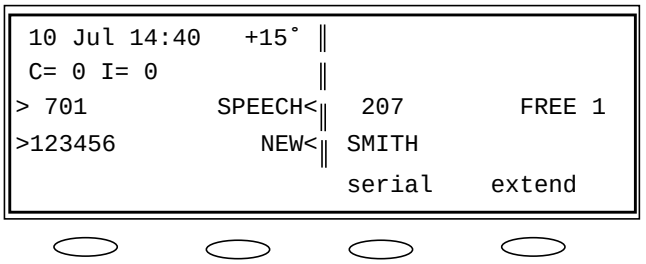
This telephone has 5 rows:

Top row shows the date and time and eventually the temperature.

Second row shows the indication of the Common and Individual operator queue.

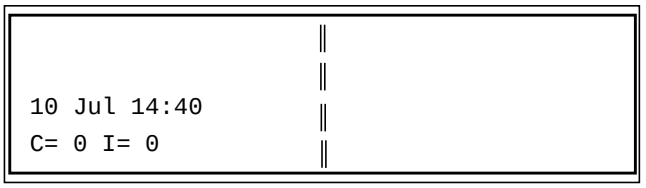
The 3rd and 4th row show the connected party.

The bottom row shows the 4 menu functions that are activated by the 4 keys below.



12.6 OPERATOR's Console, DBC 663 and DBC 754

On the OPERATOR's Console the area is used for programming with the same display picture as for the 2*20 character display.



13 SYSTEM PROGRAMMING

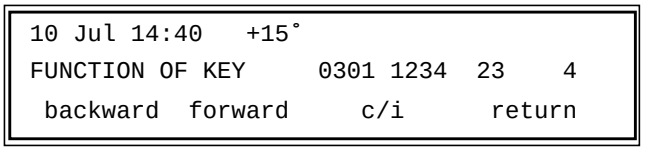
This section provides guidance in system programming from an EXECUTIVE Telephone DBC 213 or an OPERATOR Console DBC 214. When an EXECUTIVE Telephone is used an **Enter** key should be programmed to facilitate the programming. Recommended programmable key is key **E.**

On the Operator's Console (DBC 214) the Answer/Extend-key is used as the ENTER-key while programming.

When no special Enter key has been programmed the key combination **2nd /** # can be used as an enter function.
System programming can also be made from other types of older telephones, but the procedures for these telephones are not described in detail.

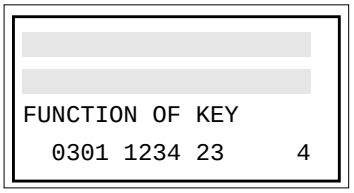
- EXECUTIVE Telephone DBC 662
- EXECUTIVE Telephone DBC 753
- OPERATOR's Console DBC 663
- OPERATOR's Console DBC 754

Display for EXECUTIVE Telephone, DBC 213



Display for EXECUTIVE Telephone, DBC 662 and DBC 753.

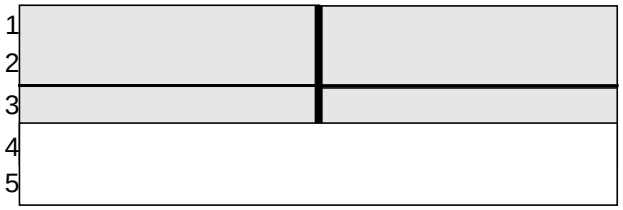
The command text is on the upper row while command number and input fields are on the lower row.



The grey area only exists in DBC 662.

Display for OPERATOR's Console, DBC214

On the OPERATOR's Console the 4th and 5th line (white area) is used for programming with the same display picture as for the 2*20 character display.



13.1 Prerequisites for system programming

System programming demands:

- an EXECUTIVE Telephone or an OPERATOR's Console
- An extension user who undertakes system programming shall possess a facility category (COS) that permits system programming
- The extension user shall have an authorisation code that permits programming of the relevant function

The programming function utilises the bottom two lines of the display, the four **menu keys** and the **Enter** key.

The display images shown in the description below, are only for the EXECUTIVE Telephone.

The differences in display layout for other telephone types, see the description under section "Display Messages".

13.1.1 To access programming mode

The EXECUTIVE Telephone shows in idle state:

```
10 Jul 14:40   +15°
JOHNSON
directory              redial      prog
```

Press ***00#**

NOTE: The menu key **prog** accesses individual programming only.

The display shows:

```
10 Jul 14:40   +15°
SELECT PROGRAMMING
system    phone
```

Select **"system"** for system programming.

The display shows:

```
10 Jul 14:40   +15°
ENTER PASSWORD      _
```

Enter relevant authorisation code and press **Enter**.

The display shows:

```
10 Jul 14:40   +15°
ENTER COMMAND         _
 copy                              return
```

13.1.2 To enter command group

Enter relevant command group and press **Enter.**

The display shows (for example):

```
10 Jul 14:40   +15°
FACILITY ACCESS     30_
 backward  forward      c/i        return
```

To the left is the text explaining the function of the command group and to the right the command group number (30).

The menu keys **backward** and **forward** can be used to step through the different command groups.

By pressing **return** the previous display is shown.

13.1.3 To enter command number

Enter relevant number and press **Enter.**

The display shows (for example).

```
10 Jul 14:40   +15°
DAY/NIGHT COMMON   C 3001    5      Y
 backward  forward     c/i      return
```

The text to the left explains the command function, followed by the command number and a flashing cursor that points to where a value shall be entered or can be altered (Y).

Enter the relevant value and press **Enter**.

If several fields are to be completed the cursor will move automatically to the next field, for example if a directory number is to be typed.

```
10 Jul 14:40   +15°
FUNCTION OF KEYS       0301  _
 backward  forward     c/i      return
```

Enter the relevant value in the new field and press **Enter**.

After the last field has been completed press **Enter** and the next command number is displayed as confirmation that the system has accepted the programming.

13.1.4 Commands with extra data field

For certain commands, where the input field is so long that not all of it can be seen on the display, this is indicated at the extreme right by means of an arrow (>).

The example below shows a command that enables two numbers to change (swap) position

```
10 Jul 14:40   +15°
SWAP EXTENSION NO   5603                >
 backward  forward     c/i      return
```

When the arrow is displayed at the extreme right press **Enter**, whereupon a new input field is shown.

```
10 Jul 14:40   +15°
SWAP DIR.NO  =  zzzz WITH DIR.NO  =  qqqq
 backward  forward     c/i      return
```

Complete the left entry and press **Enter**.

Then complete the right entry and press **Enter**.

The next command is displayed.

13.1.5 To step between commands and individuals

The **"c/i"** menu key makes it possible to let the **backward / forward** keys to have different meanings:

In these commands a letter, **C** or **I**, is shown just before the command number.

```
10 Jul 14:40   +15°
FUNCTION OF KEY    C 0301 1234  23    4
 backward  forward     c/i      return
```

```
10 Jul 14:40   +15°
FACILITY COS       I 0101  200  0
 backward  forward     c/i      return
```

C indicates that key **backward** and **forward** step the command to the next or preceding command number.

In this manner different commands can be programmed for the same individual (extension or trunk).

I indicates that key **backward** and **forward** step the individual (extension or trunk) for the same command. In this mode it is possible to program the same command for several different extensions/trunks.

See also "Copying function" below.

13.1.6 Copying function

An entered value for an extension or trunk can be copied to an optional number of other extensions or trunks.

This is useful when, for example, several extensions are to be assigned the same categories or key functions.

When the display shows ENTER COMMAND, press **"copy"** to access the copying function.

The display now shows:

```
10 Jul 14:40   +15°
COPY:_
                      pf_3     return
```

Enter the command to be copied followed by the directory number of the extension or trunk that is to serve as reference for copying.

The display now shows (for example):

```
10 Jul 14:40   +15°
COPY:0101   200    TO  :_
                      pf_3     return
```

If the command is of a type that also requires a record number to be stated, for example when programming keys on telephones, this shall also be stated when copying:

```
10 Jul 14:40   +15°
COPY:0301   200 03  TO  :_
                        pf_3     return
```

Those individuals to which copying shall take place can now be entered.

13.1.6.1 One or more individuals can be entered

Individuals are separated by a comma = menu key **","**.

Several individuals in sequence are separated by hyphen = menu key "**-**".

Example:

200 shall be copied to extensions 200, 205, 206, 207, 208 and 209.

```
10 Jul 14:40   +15°
COPY:0101   200     TO  : 200,205-209
                        pf_3     return
```

13.1.6.2 To copy an entire command group

It is possible to copy all commands in a command group. In this case only the two digits of the command group are entered followed by *****.

Example:

All categories in command group 01 are to be copied

```
10 Jul 14:40   +15°
COPY:01*    200     TO  :_
                        pf_3     return
```

To copy all records in a command group

For example all keys from extension 200 are to be copied to a number of other extensions.

Enter ***** to then state that all records, that is keys, are to be copied

```
10 Jul 14:40   +15°
COPY:0301   200 *   TO  :_
                        pf_3     return
```

13.1.7 Return

It is always possible to return to the preceding level by pressing key **return**.

13.1.8 To quit programming mode

It is always possible to quit the programming mode by pressing the **Clear** key.
On the Operator's Console DBC 214
the "Clear-right"-key has to be used.
On the Operator's Console DBC 663 and DBC 754
the "Message"-key has to be used.

13.1.9 Error indication

If one presses a key for the wrong function or selects a non approved parameter an error tone comprising three short tone bursts will be heard.

As a rule the display will show a fault message. To erase the fault message press menu key **return** (or **pf_3**).

14 INDIVIDUAL PROGRAMMING

14.1 General

Extensions equipped with system telephones can access an individual programming mode.
What can be programmed varies depending on which telephone is used.

Programmable function	OPERATOR, DBC 214	EXECUTIVE, DBC 213	STANDARD, DBC 212	ECONOMYplus, DBC 211	BASIC, DBC 210
Function keys	X	X	X	X	X
2nd layer (indiv. abb. numbers)	X	X	X	X	
Diversion	*	X	X	X	
Ring character	X	X	X	X	X
Ring volume	X	X	X	X	X

* Offduty destination

14.2 Programmable keys

Extension users can only program those functions permitted by the extension's facility category.

The following parameters can be altered:

- FUNCTION =
  Determine function of key e.g. EXTERNAL LINE
- ASSOCIATED NUMBER =
  Determine e.g. which trunk shall be stored on key defined as EXTERNAL LINE
- RING TYPE =
  Determines how incoming calls shall ring at relevant key

- PRIORITY =
  Used only for ACD-answer keys. States which priority the answer key possesses in relation to other ACD-answer keys

The parameters that need to be stated for the respective functions are listed in the table below:

FUNCTION	CODE	ASS.NO.	RING TYPE	PRIORITY
Name Selection	10	Dir. No.	-	-
Suffix dialling	11	I-digit	-	-
External line	12	Dir. No.	0-5	-
Supervision	13	Dir. No.	0-5	-
Intercom	14	Dir. No.	0-5	-
Loudspeaker paging	15	Group 0-7	-	-
ACD Group key	16	Group. No.	0-5	0-7
ACD Supervision	17	Agent Dir. No.	-	-
Common Mailbox	18	Dir. No.	-	-
Slave Supervision	19	-	-	-
R key	25	-	-	-
Busy/Free 2nd access	26	-	-	-
Conference	27	-	-	-
Immediate answer	28	-	-	-
ACD ready	29	-	-	-
Account code	30	-	-	-
ACD clerical	31	-	-	-
ACD help	32	-	-	-
OPERATOR hold	33	-	-	-
External Voice mailb.	34	-	-	-
Hold	35	-	-	-
Transfer	36	-	-	-
Save/Redial	37	-	-	-
Read&	38	-	-	-
Enter	39	-	-	-
Number secrecy	40	-	-	-
MCID	41	-	-	-
Logon/off Slave	43	-	-	-
ACD pause	44	-	-	-

EXECUTIVE Telephone:

14.2.1 To enter programming mode

- Press **prog**

Display for individual programming is shown:

```
10 JUL 14:40   +15°
PHONE PROGRAMMING
   key    short-no.  diversion  ringing
```

Select relevant function.

Press **Clear** key to quit programming mode.

14.2.2 To program individual short numbers

- Press **short-no.**

The display shows:

```
10 JUL 14:40   +15˚
SHORT NUMBER - ENTER KEY
                              return
```

- Press relevant key.
  Associated lamp lights

The display shows:

```
10 Jul 14:40   +15˚
SHORT NUMBER                    _
 store                        return
```

- Enter relevant number
- To program "wait for dial tone" press **2nd / 2.**
- Press **store**. The associated lamp extinguishes.
- Press any key to program new key
- Press **return** to go back to selection image
- Press **Clear** key to quit programming mode.

14.2.3 To program divertee address

Press menu key **"diversion"**.

Lamp for **Diversion** key lights.

The display shows:

```
10 Jul 14:40   +15˚
DIVERSION ADDRESS               _
 store                        return
```

Enter relevant directory number and press **store**.
The lamp extinguishes.

14.2.4 To program keys

Press **key**.

The display shows

```
10 Jul 14:40   +15˚
PROGRAMMABLE KEYS  ENTER KEY
                              return
```

Press relevant key.

Associated lamp lights.

The display shows what is currently programmed for the key

```
10 Jul 14:40   +15˚
NAMECALL
                      change    return
```

Press **change** if one wishes to alter a parameter.

Press **return** to go back to previous display.

In the example below all parameters are shown. Generally only those parameters are displayed that are relevant to a function.

```
10 Jul 14:40   +15˚
SELECT FUNCTION -   ACD-GROUP       16
backward  forward     enter     return
```

Use **backward** - and **forward** keys to scroll to relevant function and, when this is displayed, press **enter**.

If the function requires supplementary information a new display image will be shown:

```
10 Jul 14:40   +15˚
ASSOCIATED NUMBER                   _
  store                         return
```

Enter the directory number to be supervised and press **store**.

The display shows a new image:

```
10 Jul 14:40   +15°
RING TYPE    -       NO RINGING        0
backward  forward     enter     return
```

Use **backward** - and **forward** keys to scroll to relevant ring type and, when this is displayed, press **enter**.

The display now shows the priority parameter:

```
10 Jul 14:40   +15°
SELECT PRIORITY                        1
backward  forward     enter      return
```

Enter the new ORDER PRIORITY and then press **enter**.

After all parameters have been shown the result of programming will be displayed:

```
10 Jul 14:40   +15°
ACD-GROUP NUMBER 7 - ONE RING DEL.   P=1
                      change    return
```

If several function keys are to be programmed press the relevant key and the situation of this key will be displayed:

- Press **return** to go back to selection image
- Press **Clear** key to quit programming mode

14.2.5 To program ringing

Press **ringing** from the menu and the display shows:

```
10 Jul 14:40   +15°
RINGING - CHANGE
  type     volume   character   return
```

To program ring type.

Press **type**, the display shows:

```
10 Jul 14:40   +15°
PROGRAMMED TYPE OF RINGING:  CONSTANT
                        next      return
```

There are two ring types:

- Constant ringing level for all ring bursts
- Increasing level for each ring burst

Press **next** to select another ring type.

Press **return** to save the type of ring and return to the selection menu.

To program ring volume:

Press **volume**:

Use keys **lower** and **higher** to adjust the ring volume

System responds by a ring burst of the selected volume.

Program type of ring character:

Press key **character**

- Press **next** to adjust the ring character Telephone signals calls with one ring burst corresponding to selected character. Procedure can be repeated an optional number of times. There are 10 different character to choose from.
- Press **return** to store the selected character and go back to previous display picture

ECONOMYplus - and STANDARD Telephone

14.2.6 Access programming mode

Key following sequence:

- ***00*. On/off** lamp lights

You are now in Phone programming mode.

The display on the Standard Telephone shows:

```
PROGRAMMING
```

14.2.7 To program individual short numbers

Key follow sequence:

- **2nd** key
- Select programmable key
- Associated lamp lights
- On keyset, key digits to be stored ("Wait for 2nd dial tone" is to be stated with **2nd / 2** keys)
- Press selected key again.
  Associated lamp extinguishes.

14.2.8 To program divertee address

Key following sequence:

- **Diversion** key
  Diversion lamp lights
- On keyset, key divertee position's directory number (1 - 4 digits)
- **Diversion** key.
  Lamp extinguishes.

14.2.9 Programmable keys

When the ASB 150 02 system is started for the first time the function on all programmable keys = NAME SELECTION.

This function can be altered by altering the key's function code.

A selected function code can (may) require further parameters to be stated.

14.2.10 Programming sequence

The various parameters are programmed in one sequence.

- Key
- Function code (10 - 39)
- Key
- Associated number (usually directory number)
- Key
- Ring type (0 - 5)
- Key
- Priority (0 - 7)
- Key

The lamp associated with the key lights on the first key depression and remains lit until all parameters have been entered.

14.2.11 Programming example

Program key **A** as a SUPERVISION-key of calls to extension 200.

Calls are to be presented with one muted ring burst.

Key sequence:

- **A** key
- **3** (function code 3)
- **A** key
- **200** (directory number= 200)
- **A** key
- **3** (one mute ring burst)
- **A** key

14.2.12 To program ringing

To program ring type:

- Press **1*** ring type (1 - 2)

To program ring volume:

- Press **2*** level (0 - 9)

To program ring character:

- Press **3*** character (0 - 9)

System answers to each programming with ring bursts of the selected type, volume or character.

BASIC Telephones

14.2.13 Access programming mode

Key following sequence:

- ***00*. Loudspeaker** lamp lights

You are now in Phone programming mode.

14.2.14 Programmable keys

When the ASB 150 02 system is started for the first time the function on all programmable keys = NAME SELECTION.

This function can be altered by altering the key's function code.

A selected function code can (may) require further parameters to be stated.

14.2.15 Programming sequence

The various parameters are programmed in one sequence.

- Key
- Function code (10 - 39)
- Key
- Associated number (usually directory number)
- Key
- Ring type (0 - 5)
- Key
- Priority (0 - 7)
- Key

The lamp associated with the key lights on the first key depression and remains lit until all parameters have been entered.

14.2.16 Programming example

Program key **A** as a SUPERVISION-key of calls to extension 200.

Calls are to be presented with one muted ring burst.

Key sequence:

- **A** key
- **3** (function code 3)
- **A** key
- **200** (directory number= 200)
- **A** key
- **3** (one mute ring burst)
- **A** key

14.2.17 To program ringing

To program ring type:

- Press **1*** ring type (1 - 2)

To program ring volume:

- Press **2*** level (0 - 9)

To program ring character:

- Press **3*** character (0 - 9)

System answers to each programming with ring bursts of the selected type, volume or character.

15 COMMAND LIST

The following list shows all commands that can be accessed from authorised telephones and/or via RASC.

An authority level is assigned to each command that is accessable from authorised telephones. This authority level defines which commands can be accessed from.

command number	command name	minimum required authority level from telephone	accessable via RASC

01 Extension parameters

0101	Facility COS	1	YES
0102	Traffic group	1	YES
0103	TCD-day COS	1	YES
0104	TCD-night COS	1	YES
0105	Common short no COS	1	YES
0106	Call back allowed?	1	YES
0107	Break-in allowed?	1	YES
0108	Camp-on allowed?	1	YES
0109	Direct diversion?	0	YES
0110	Diversion on no reply internal ?	0	YES
0111	Diversion on busy internal ?	0	YES
0112	Diversion address	0	YES
0113	Follow me address	0	YES
0114	Ringing line 1	0	YES
0115	Ringing line 2	1	YES
0116	Hot line	1	YES
0117	Authority code?	1	YES
0118	Guest extension?	1	YES
0119	Diversion time long	1	YES
0120	Diversion time short	1	YES
0121	DTMF to instrument?	1	YES
0122	Long ring bursts ?	1	YES
0123	Repeated call diversion?	1	YES
0124	Call waiting tone?	1	YES
0125	Voice mail extension?	1	YES
0139	Filter coefficient	NO	YES
0140	Transmission group	NO	YES
0141	Relative sending level	NO	YES
0142	Relative receiving level	NO	YES
0143	Line break time	NO	YES
0144	Hot line delay time	1	YES
0145	Relay control	1	YES
0146	Meter info allowed?	1	YES
0147	Type of metering info	1	YES
0148	Automatic display of metering information	NO	YES
0149	Number secrecy?	1	YES
0150	Individual charging	NO	YES
0151	Tenant Group	1	YES
0152	Override LCR?	1	YES
0153	Direct carrier access LCR	1	YES
0154	Limit routing choices LCR	1	YES
0155	Disable call state msg to line?	NO	YES
0156	Direct diversion external	1	YES
0157	Diversion on no reply external	1	YES
0158	Diversion on busy external	1	YES
0159	Direct diversion internal	1	YES
0160	Password check retrieving messages internally	1	YES
0161	Music channel in hold state	1	YES
0162	Terminal type	NO	YES
0163	RTR from extension enabled?	NO	YES
0164	DID to extension enabled?	NO	YES
0165	Diversion on no reply to slave	1	YES
0166	Slave always logged on	1	YES
0167	Ring on master and slave	1	YES
0168	ACD key layout	1	YES
0169	Directory number in subscribed PSTN series?	1	YES
0170	Number secrecy to CN net?	1	YES
0171	Travelling Class Mark (TCM)	NO	YES
0172	Diversion on not available int.	1	YES
0173	Diversion on not available ext.	1	YES
0174	Alarm group	NO	YES
0175	Use as CTI operator instrument	NO	YES
0176	Call Diversion to a CN number allowed?	1	YES
0177	Initiate Call back to CN?	1	YES
0178	ISDN caller list allowed?	1	YES
0179	TCD suffix dialling COS - day	1	YES
0180	TCD suffix dialling COS - night	1	YES
0181	Permanent immediate answer allowed?	1	YES

02 Programmable keys resources

0201	Number of programmable keys	1	YES
0202	Number of individual short no.	1	YES

command number	command name	minimum required authority level from telephone	accessable via RASC

03 Programmable keys

0301	Function of key	1	YES
0302	Associated Number	1	YES
0303	Ringing alternative	0	YES
0304	Priority	1	YES

04 Individual short number

0401	Extensions - Indiv.short number	0	YES

05 Access to common mailbox

0501	Receive message	1	YES

10 Trunk parameters

1001	Facility COS	NO	YES
1002	Traffic group	NO	YES
1003	TCD-day COS	NO	YES
1004	TCD-night COS	NO	YES
1005	Common short number COS	NO	YES
1006	Call back allowed ?	NO	YES
1007	Break-in allowed ?	NO	YES
1008	Camp-on answer position ?	NO	YES
1009	Rero. on answ. position barred?	NO	YES
1010	Rero. on answ. pos. blocked ?	NO	YES
1011	Rero. on answ. position vacant?	NO	YES
1012	Rero. on answ. position busy ?	NO	YES
1013	Dial tone to extension ?	NO	YES
1014	Result tones to PE ?	NO	YES
1015	Predigits for number analysis	NO	YES
1016	Reroute on no answer ?	NO	YES
1017	Reroute on too few digits ?	NO	YES
1018	Subsystem to PBX ?	NO	YES
1019	Nightswitching trunk group	NO	YES
1020	Pick up parked trunk ?	NO	YES
1022	Voiceinfo to trunk allowed?	1	YES
1023	Trunk line type	NO	YES
1024	Simplified DISA at day ?	NO	YES
1025	Simplified DISA at night ?	NO	YES
1028	LCR analysis required ?	NO	YES
1029	Tenant group	NO	YES
1030	Public number group	NO	YES
1031	Answ. by ext. line key allowed	NO	YES
1032	Trunk impedance adaption	NO	YES
1033	Impedance adaption transit	NO	YES
1034	Public dial tone to extension ?	NO	YES
1035	Travelling Class Mark	NO	YES
1036	IBERCOM network connection	NO	YES
1037	PNR route choices at incoming proprietary calls	NO	YES

11 Trunk answering position

1101	Answering position at day	1	YES
1102	Answering position at night	1	YES
1103	Reroute position at day	1	YES
1104	Reroute position at night	1	YES
1105	Common voice ann. at day	NO	YES
1106	Common voice ann. at night	NO	YES
1107	Busy voice ann. at day	NO	YES
1108	Busy voice ann. at night	NO	YES
1109	Com. voice ann. interruptable	NO	YES
1110	1st choice CN reroute position	NO	YES
1111	2nd choice CN reroute position	NO	YES
1112	3rd choice CN reroute position	NO	YES

12 Trunk line signal

1201	Line signalscheme	1	YES

13 Trunk register signal

1301	Incoming digit transmission	NO	YES
1302	Outgoing digit transmission	NO	YES
1303	Impulse type	NO	YES
1304	Impulse frequence	NO	YES
1305	Impulse ratio	NO	YES
1306	Inter digit pause	NO	YES
1307	PTS signal from PE ?	NO	YES
1308	PTS signal from PE = dial tone?	NO	YES
1309	PTS signal to PE = dial tone ?	NO	YES
1311	No. of digits before EOS-signal	NO	YES
1312	MFC signal scheme	NO	YES
1313	DTMF signal scheme	NO	YES
1314	Type of dial tone receiver, TRC	NO	YES
1315	MFE number plan for CLL	NO	YES
1316	Request A-number in MFC?	NO	YES
1317	Complete called party NL?	NO	YES

command number	command name	minimum required authority level from telephone	accessable via RASC

14 Trunk times

1401	Number of digits with long dial supervision	NO	YES
1402	Time supervision of long register signal. alt. MFC/MFE outgoing	NO	YES
1403	Time supervision of short register signal. alt. MFC/MFE outgoing	NO	YES
1404	Wait time before start to send digits when no PTS	NO	YES
1405	Wait time before metering is stopped	NO	YES
1406	Wait time before ringback/rerouting at not answered calls	NO	YES
1407	Maximum hold time	NO	YES
1408	Minimum speech time for not increasing disturbance counter	NO	YES
1409	Time for recall on transfer before answer	NO	YES
1410	Time for recall on camp on	NO	YES
1411	Time supervision for 1:st digit at automatic incoming traffic	NO	YES
1412	Time supervision between digits at automatic incoming traffic	NO	YES
1413	Time for supervision of answer at automatic incoming traffic	NO	YES
1414	Length detection 1:st PTS	NO	YES
1415	Length detection 1:st PTS	NO	YES
1416	Blocking time for outgoing call after disconnection	NO	YES
1417	Lentgh of external inquiry signal	NO	YES
1418	Minimum time for detection of Call Metering pulses	NO	YES
1419	Minimum supervision time between ringsignals	NO	YES
1420	Number of disconnection tone bursts	NO	YES
1421	Pulse time for disconnection tone burst	NO	YES
1422	Pause timefor disconnection tone burst	NO	YES
1423	Time supervision of B-answer	NO	YES

15 Trunk -> Call Meter

1501	Call meter of trunk	NO	YES
1502	Tariff number	NO	YES
1503	Carrier number	NO	YES

16 Transmission paramaters

1601	CEPT-DTMF tone receiver level (dBm0)	NO	YES
1602	ETOE-DTMF tone receiver level (dBm0)	NO	YES
1603	Dial tone receiver level (dBm0)	NO	YES
1604	MFC/MFE tone receiver level (dBm0)	NO	YES
1605	MFC/MFE tone sending level (dBm0)	NO	YES
1606	Disconnection tone receiver level (dBm0)	NO	YES
1607	Call meter type	NO	YES
1608	Call meter receiver level (dBu)	NO	YES
1609	Filter coefficient	NO	YES
1610	Relative sending level (dBr)	NO	YES
1611	Relative receiving level (dBr)	NO	YES
1612	Transmission group	NO	YES
1613	Relative sending level during DTMF (dBr)	NO	YES
1614	Call Meter (CML) receiver level	NO	YES

17 Tie Line Trunk Signal

1706	Incoming traffic: Seizure ack. ?	NO	YES
1707	Incoming traffic: PTS-signal ?	NO	YES
1708	Incoming traffic: EOS-signal ?	NO	YES
1709	Incoming traffic: Answer signal?	NO	YES
1710	Outgoing traffic: Seizure ack. ?	NO	YES
1712	Outgoing traffic: EOS-signal ?	NO	YES
1717	Outgoing traffic: Answer signal?	NO	YES
1718	Blocking on seperate E2, M2 wires ?	NO	YES

18 Preanalyze

1801	Common number at automatic outgoing / incoming traffic	NO	YES
1802	Predigits at autom. inc. traffic	NO	YES
1803	Irrelevant digits at automatic incoming traffic	NO	YES

command number	command name	minimum required authority level from telephone	accessable via RASC

19 ISDN-Link paramaters

1901	CRC-4 alarm conditions No	NO	YES
1910	Basic Access Mode	NO	YES
1911	Network according to	NO	YES
1912	Termination in ASB 150	NO	YES
1913	B-channel selection mode	NO	YES
1914	Charging method	NO	YES
1915	Calling Line presentation on ?	NO	YES
1916	Digit receiving with overlap ?	NO	YES
1917	MCID subscribed ?	NO	YES
1918	Connected line presentat. on ?	NO	YES
1919	Assigned TEI value	NO	YES
1920	CRC4 check	NO	YES
1921	Ignore inband info at disconn.	NO	YES
1940	UUS services subscription	NO	YES
1941	Request of UUS service 1	NO	YES
1942	UUI lengh service 1	NO	YES
1943	UUI in Alerting ?	NO	YES
1944	Request of UUS service 2	NO	YES
1945	Request of UUS service 3	NO	YES
1946	Forced conn. after timeout	NO	YES
1947	Handling of call collisions	NO	YES
1948	CLIR override	NO	YES
1951	Basic Access Mode	NO	YES
1952	User according to	NO	YES
1953	Type of bus	NO	YES
1954	Charging information provided to the TE?	NO	YES
1955	MCID allowed by the TE?	NO	YES
1956	MSN provided ?	NO	YES
1957	Number secrecy ?	NO	YES
1958	Common access number	NO	YES
1971	Assigned TEI values	NO	YES

20 System data

2001	Ring signal scheme	NO	YES
2003	National key (Inquiry)	NO	YES
2004	National key (Hold)	NO	YES
2005	National key (Read&)	NO	YES
2006	National key (Transfer)	NO	YES
2007	Rotary dial type	NO	YES
2008	Verification on Call back	NO	YES
2011	Trunk PCM-channels	NO	YES
2019	ACOS at authority code	NO	YES
2020	TCD-day at authority code	NO	YES
2021	TCD-night at authority code	NO	YES
2022	Short no COS at authority code	NO	YES
2023	External voice mail dir.number	NO	YES
2024	Initiate public Dialtone at LCR	NO	YES
2025	Nominal impedance anal. ext.	NO	YES
2026	Attenuation for DTMF-signalling	NO	YES
2027	Inactivity tone time	NO	YES
2028	Ringtime, internal calls	NO	YES
2029	Repeted call-waiting tone	NO	YES
2030	Disconnection tone, digital ext.	NO	YES
2032	Side tone masking rating	NO	YES
2033	Sending loudness rating	NO	YES
2034	Initiate dialtone at LCR	1	YES
2035	Predicted call duration	NO	YES
2036	Call pickup reminder/call back	NO	YES
2037	Define system type	NO	YES
2039	MOH after transfer	NO	YES
2040	Loudspeaker paging volume control, group 0	NO	YES
2041	Loudspeaker paging volume control, group 1	NO	YES
2042	Loudspeaker paging volume control, group 2	NO	YES
2043	Loudspeaker paging volume control, group 3	NO	YES
2044	Loudspeaker paging volume control, group 4	NO	YES
2045	Loudspeaker paging volume control, group 5	NO	YES
2046	Loudspeaker paging volume control, group 6	NO	YES
2047	Loudspeaker paging volume control, group 7	NO	YES
2048	Loudsp. paging volume control, override indiv. volume, group 0	NO	YES
2049	Loudsp. paging volume control, override indiv. volume, group 1	NO	YES
2050	Loudsp. paging volume control, override indiv. volume, group 2	NO	YES
2051	Loudsp. paging volume control, override indiv. volume, group 3	NO	YES
2052	Loudsp. paging volume control, override indiv. volume, group 4	NO	YES
2053	Loudsp. paging volume control, override indiv. volume, group 5	NO	YES
2054	Loudsp. paging volume control, override indiv. volume, group 6	NO	YES
2055	Loudsp. paging volume control, override indiv. volume, group 7	NO	YES

command number	command name	minimum required authority level from telephone	accessable via RASC
2056	Shutdown reroute position	NO	YES
2057	Follow me / Diversion to ACD	NO	YES
2060	Consol. time from alarm to OK	NO	YES
2061	First priority link for synchr.	NO	YES
2062	Second priority link for synchr.	NO	YES
2063	Third priority link for synchr.	NO	YES
2064	Fourth priority link for synchr.	NO	YES
2065	Fifth priority link for synchr.	NO	YES
2070	Keypad characters	NO	YES
2071	ISID of external voice mailbox	NO	YES
2072	MD110 release version of CN	NO	YES
2077	1st central answer position	NO	YES
2078	2nd central answer position	NO	YES
2079	3rd central answer position	NO	YES
2080	Free 2nd access	NO	YES
2081	Modified business key layout	NO	YES
2082	Transfer via hookon	NO	YES
2083	Term. ACD calls w.groups key	NO	YES
2084	Type of network call handling	NO	YES
2085	PBX protocol identifier	NO	YES
2086	Non blocked ACD	NO	YES
2087	Transit counter	NO	YES
2088	TCD suff. dial at COS-day	NO	YES
2089	TCD suff. dial at COS-night	NO	YES
2090	VPN service from PSTN	NO	YES
2091	Predigits sent to PSTN-VPN	NO	YES
2092	Trunk/Route selected at PSTN-VPN calls	NO	YES

21 System times

2101	Recall on parking	NO	YES
2104	Recall individual parking	NO	YES
2105	Minimum release signal	NO	YES’
2106	Minimum register signal	NO	YES
2108	MFE time 1 (s)	NO	YES
2109	MFE time 2 (s)	NO	YES
2110	Delay voice announcement	NO	YES
2111	Alerting timeout (s)	NO	YES

22 Number analysis

2201	TCD-analysis	1	YES
2202	Open for TCD COS 1	1	YES
2203	Open for TCD COS 2	1	YES
2204	Open for TCD COS 3	1	YES
2205	Open for TCD COS 4	1	YES
2206	Open for TCD COS 5	1	YES
2207	Open for TCD COS 6	1	YES
2208	Open for TCD COS 7	1	YES
2209	Open for TCD COS 8	1	YES
2220	Public directory numbers	NO	YES
2221	PSTN-operator call number	NO	YES
2222	Incoming external call numbers	NO	YES
2240	Public destination number table	NO	YES
2250	Dest. number cross ref. table	NO	YES

23 Traffic group control

2301	Traffic group matrix, from/to 1	NO	YES
2302	Traffic group matrix, from/to 2	NO	YES
2303	Traffic group matrix, from/to 3	NO	YES
2304	Traffic group matrix, from/to 4	NO	YES
2305	Traffic group matrix, from/to 5	NO	YES
2306	Traffic group matrix, from/to 6	NO	YES
2307	Traffic group matrix, from/to 7	NO	YES
2308	Traffic group matrix, from/to 8	NO	YES
2309	Traffic group matrix, from/to 9	NO	YES
2310	Traffic group matrix, from/to 10	NO	YES
2311	Traffic group matrix, from/to 11	NO	YES
2312	Traffic group matrix, from/to 12	NO	YES
2313	Traffic group matrix, from/to 13	NO	YES
2314	Traffic group matrix, from/to 14	NO	YES
2315	Traffic group matrix, from/to 15	NO	YES
2340	Traffic check at conference	NO	YES
2341	Traffic check at operator conf.	NO	YES
2342	Traffic check at call pick-up	NO	YES
2343	Traffic check at break-in	NO	YES

24 Define facility digits

2401	Camp-on	NO	YES
2402	Call back	NO	YES
2403	Call pick up	NO	YES
2406	Executive intrusion	NO	YES
2407	Radio paging	NO	YES
2408	Message	NO	YES

command number	command name	minimum required authority level from telephone	accessable via RASC

25 Common short numbers

2501	Common short numbers	1	YES
2502	Open for short numbers COS 0	1	YES
2503	Open for short numbers COS 1	1	YES
2504	Open for short numbers COS 2	1	YES
2505	Open for short numbers COS 3	1	YES
2530	Single FN handling	1	YES

26 Tones

2601	Tone fragment definition	NO	YES
2610	DTMF-tones: Number of DTMF	NO	YES
2611	DTMF-tones: Level (dBm0)	NO	YES
2612	DTMF-tones: Level difference	NO	YES
2613	DTMF-tones: Signal time (ms)	NO	YES
2614	DTMF-tones: Pause time (ms)	NO	YES
2620	Dial tone	NO	YES
2621	Special dial tone	NO	YES
2622	Special ring tone	NO	YES
2623	Ring tone	NO	YES
2624	Busy tone	NO	YES
2625	Congestion tone	NO	YES
2626	Number unobtainable tone	NO	YES
2627	Acknowledgement tone	NO	YES
2628	Loudspeaker paging call tone	NO	YES
2629	Disconnection tone	NO	YES
2630	Handsfree answering tone	NO	YES
2631	Minor error tone	NO	YES
2632	Major error tone	NO	YES
2633	Queue tone	NO	YES
2634	Inactivity tone	NO	YES
2635	Warningtone conference	NO	YES
2636	Warningtone break in	NO	YES
2637	Warningtone break in operator	NO	YES
2638	Warningtone conference oper.	NO	YES
2639	Parking tone	NO	YES
2640	Alternative ring tone	NO	YES
2641	Alternative busy tone	NO	YES
2642	Alternative NU tone	NO	YES
2643	Alternative dial tone	NO	YES
2644	Okay, continue tone	NO	YES
2645	Call waiting tone, non repetitive	NO	YES
2646	Call waiting tone, repetitive	NO	YES
2647	Congestion tone (resources)	NO	YES
2648	Public dial tone	NO	YES
2649	Test tone	NO	YES
2690	Fixed tones (read only)	NO	YES

27 Transmission

2710	Transmission group matrix: 0	NO	YES
2720	Transmission group matrix: 1-7	NO	YES
2730	Conference transmission table	NO	YES

28 Short no. open for tenant

2801	Open for tenant group 0	1	YES
2802	Open for tenant group 1	NO	YES
2803	Open for tenant group 2	NO	YES
2804	Open for tenant group 3	NO	YES
2805	Open for tenant group 4	NO	YES
2806	Open for tenant group 5	NO	YES
2807	Open for tenant group 6	NO	YES
2808	Open for tenant group 7	NO	YES
2809	Open for tenant group 8	NO	YES
2810	Open for tenant group 9	NO	YES
2811	Open for tenant group 10	NO	YES
2812	Open for tenant group 11	NO	YES
2813	Open for tenant group 12	NO	YES
2814	Open for tenant group 13	NO	YES
2815	Open for tenant group 14	NO	YES
2816	Open for tenant group 15	NO	YES

30 Facility access

3001	Day/night initiation	1	YES
3002	Transfer before answer ?	1	YES
3003	System programming ?	1	YES
3004	Intrusion ?	1	YES
3005	Conference ?	1	YES
3006	Loudsp. paging group 0 ?	1	YES
3007	Loudsp. paging group 1 ?	1	YES
3008	Loudsp. paging group 2 ?	1	YES
3009	Loudsp. paging group 3 ?	1	YES
3010	Loudsp. paging group 4 ?	1	YES
3011	Loudsp. paging group 5 ?	1	YES
3012	Loudsp. paging group 6 ?	1	YES
3013	Loudsp. paging group 7 ?	1	YES
3014	Send message from others ?	1	YES
3015	Send voice message ?	1	YES

command number	command name	minimum required authority level from telephone	accessable via RASC
3016	Send text message ?	1	YES
3017	Send "call me" message ?	1	YES
3018	Give info for others ?	1	YES
3019	Give voice info ?	1	YES
3020	Give text info ?	1	YES
3021	Give predefined info ?	1	YES
3022	Day/night system	1	YES
3023	Day/night trunk group 1	1	YES
3024	Day/night trunk group 2	1	YES
3025	Day/night trunk group 3	1	YES
3026	Day/night trunk group 4	1	YES
3027	Day/night trunk group 5	1	YES
3028	Day/night trunk group 6	1	YES
3029	Day/night trunk group 7	1	YES
3030	Day/night trunk group 8	1	YES
3031	Program namecall ?	1	YES
3032	Program suffix digit ?	1	YES
3033	Program external line ?	1	YES
3034	Program supervision ?	1	YES
3035	Program dedicated line ?	1	YES
3036	Program loudspeaker paging ?	1	YES
3037	Program ACD-group ?	1	YES
3038	Program busy line ?	1	YES
3039	Program conference ?	1	YES
3040	Program immediate answer ?	1	YES
3041	Program ACD ready ?	1	YES
3042	Program **R** key ?	1	YES
3043	Program account code ?	1	YES
3044	Program ACD supervision	1	YES
3045	Program ACD clerical	1	YES
3046	Program ACD help	1	YES
3047	Program operator hold	1	YES
3048	Program external voice mail	1	YES
3049	Program malicious call ID ?	1	YES
3050	Program number secrecy ?	1	YES
3052	Program com. message key?	1	YES
3053	Program logon/out slave key	1	YES
3054	Program supervise slave key	1	YES
3055	Program ACD pause key?	1	YES
3060	Room status view?	1	YES
3061	Check in/out?	1	YES
3062	Wakeup ordering?	1	YES
3063	Wakeup for others?	1	YES
3064	Paging ?	1	YES
3065	Common hold ?	1	YES
3066	Return messages ?	1	YES
3067	Control messages ?	1	YES
3068	Print ACD statistics ?	1	YES
3069	Reminder ordering ?	1	YES
3070	Room to room / DID bar ?	1	YES
3071	Ext. voice mail indication?	1	YES
3072	Silent intrusion ?	1	YES
3073	Alarm extension ?	1	YES
3074	Read alarm ?	1	YES
3075	Read own meter ?	1	YES
3076	Read others meters ?	1	YES
3077	Print others meters ?	1	YES
3078	Reset others meter ?	1	YES
3079	Malicious call ID ?	1	YES
3080	Receive message ?	1	YES
3082	Bypass Call Diversion ?	1	YES
3083	Day/night ACD group 0	1	YES
3084	Day/night ACD group 1	1	YES
3085	Day/night ACD group 2	1	YES
3086	Day/night ACD group 3	1	YES
3087	Day/night ACD group 4	1	YES
3088	Day/night ACD group 5	1	YES
3089	Day/night ACD group 6	1	YES
3090	Day/night ACD group 7	1	YES
3091	Day/night all ACD groups	1	YES

31 Facility name

3102	Name loudsp. paging group 0	3	YES
3103	Name loudsp. paging group 1	3	YES
3104	Name loudsp. paging group 2	3	YES
3105	Name loudsp. paging group 3	3	YES
3106	Name loudsp. paging group 4	3	YES
3107	Name loudsp. paging group 5	3	YES
3108	Name loudsp. paging group 6	3	YES
3109	Name loudsp. paging group 7	3	YES

32 Route members

3201	Route members	NO	YES

33 Route conditions

3301	Random selection ?	NO	YES
3302	Call back allowed ?	NO	YES
3303	Predigits	NO	YES
3304	Alternative route choice 1	NO	YES
3305	Predigits choice 1	NO	YES
3306	Alternative route choice 2	NO	YES
3307	Predigits choice 2	NO	YES

command number	command name	minimum required authority level from telephone	accessable via RASC

34 PBX group members

3401	PBX-member's dir. no	1	YES

35 PBX group conditions

3501	Random selection ?	1	YES

36 Music

3601	Music source directory number	NO	YES

37 ACD common data

3701	Period initiate	1	NO
3704	Queue tone?	1	YES
3705	ACD-I/O monitor frequency	1	YES
3706	ACD I/O port for PC-graph	1	YES
3707	Print statistics	1	NO
3708	ACD I/O port for MIS	1	YES
3709	New agent = last?	1	YES
3710	Pause time	1	YES
3711	Non ACD callcode request ?	1	YES
3712	Display clerical time ?	1	YES

38 ACD group data

3801	ACD-group number	1	YES
3802	Time receive answer 1	1	YES
3803	Time receive answer 2	1	YES
3805	Number of calls	1	NO
3806	Number of answered calls	1	NO
3807	Average queuing time	1	NO
3810	Statistic time (T1)	1	YES
3811	Statistic time (T2)	1	YES
3812	Answered calls (-T1)	1	NO
3813	Answered calls (T1+)	1	NO
3814	Disconnected calls (-T1)	1	NO
3815	Disconnected calls (T2+)	1	NO
3816	Maximum queue length	1	YES
3817	Dynamic queue function?	1	YES
3818	Queue info = position?	1	YES
3819	No answer time	1	YES
3820	Clerical time	1	YES
3821	ID-code required?	1	YES
3822	Callcode required?	1	YES
3823	Monitor answer announcement?	1	YES
3824	ACD reroute position	1	YES
3825	Overflow time	1	YES
3826	Individual greeting per agent	1	YES
3827	ACD answer position night	1	YES
3828	Enter multiple call code during clerical state allowed ?	1	YES
3829	Number of timeouts ?	1	YES
3830	Clerical time ended by key	1	YES

39 ACD voice answer

3901	1st ACD voice answer reference	1	YES
3902	2nd ACD voice answer reference	1	YES
3903	ACD answer announcement	1	YES

40 Operator functions

4001	Alternative answering position	1	YES
4003	Answering time	1	YES
4004	Cyclical selection ?	1	YES
4005	Auto. answer supervision time	1	YES
4006	Queue announcement time	1	YES
4007	Queue announcem. reference	1	YES
4008	Calling of extension at inc. call	NO	YES
4009	Two ext. lines at operat. 3-party	NO	YES
4010	Two PE-lines at operat. 3-party	NO	YES
4011	Listening during the announc.	NO	YES
4012	Sending a ready tone after ann.	NO	YES

41 Operator individual

4101	Operator line position	1	YES
4102	Operator answer reference	1	YES
4103	Ringburst at queue?	1	YES
4104	Receiving of tone signals	NO	YES

command number	command name	minimum required authority level from telephone	accessable via RASC

42 Group call pick-up

4201	Dir. no. of member	1	YES

43 Message & information data

4301	Max. time for speech message	1	YES
4302	Max. time for speech info	1	YES
4303	Max. time for speech announcement	1	YES
4304	Time to keep message	1	YES
4305	High message quality?	1	YES
4306	High information quality?	1	YES
4307	High announcement quality?	1	YES
4308	No answer to sender (days)	1	YES
4309	Keep answered call me	1	YES
4310	Keep answered voice	1	YES
4311	Keep answered text	1	YES
4312	Short message store?	1	YES
4314	Simultaneous retrievings	1	YES
4315	Silent detection level VMU-HD	NO	YES
4316	Silent detection time VMU-HD	NO	YES

44 Voice announcement recording

4401	Voice Announcements	1	NO
4402	Information	1	NO
4403	Months	1	NO
4404	Dates	1	NO
4405	Hours	1	NO
4406	5 Minutes interval	1	NO
4407	Hours - language 2	1	NO
4408	5 Minutes interval - language 2	1	NO
4409	Hours - language 3	1	NO
4410	5 Minutes interval - language 3	1	NO
4411	AA reference number	1	NO
4412	Voice message prompts	1	NO
4413	Message prompts - language 2	1	NO
4414	Message prompts - language 3	1	NO
4415	Welcome individual	1	NO
4416	Retrieving individual	1	NO
4417	Welcome common	1	NO
4418	Retrieving common	1	NO
4419	Digits	1	NO
4420	Digits - language 2	1	NO
4421	Digits - language 3	1	NO
4422	Common voice prompts	1	NO
4423	DISA voice prompts	1	NO
4424	Announcements for trunks	1	NO
4425	ACD anno 1-255	1	NO
4426	CTI-AA prompts 1- 24	1	NO
4427	Recording music announcement	1	NO
4450	Loading voice anno	1	NO

45 Predefined information

4501	Text 1 - 35 characters	1	YES
4502	Meaning of digits 1 - 4	1	YES

46 Voice memory card control

4601	Record message allowed ?	1	YES
4602	Record info allowed ?	1	YES
4603	Record announcement allowed?	1	YES
4604	VMU resources check	1	NO *

47 Voice Answer Reference

4701	Voice answer reference	1	YES
4702	Voice answer storage	NO	YES

48 Voice paging groups

4801	Member of voice paging grp.0?	1	YES
4802	Member of voice paging grp.1?	1	YES
4803	Member of voice paging grp.2?	1	YES
4804	Member of voice paging grp.3?	1	YES
4805	Member of voice paging grp.4?	1	YES
4806	Member of voice paging grp.5?	1	YES
4807	Member of voice paging grp.6?	1	YES
4808	Member of voice paging grp.7?	1	YES
4809	Voice paging volume	1	YES

command number	command name	minimum required authority level from telephone	accessable via RASC

49 Conference

4901	Number of participants	NO	YES
4902	Number of external lines	NO	YES
4903	Number of PE-lines	NO	YES

52 Define password

5201	Password for level 0	1	YES
5202	Password for level 1	1	YES
5203	Password for level 2	NO	YES
5204	Password for level 3	NO	YES
5205	Login fail limit	NO	YES
5206	Login fail action	NO	YES
5207	Login fail bar time (min.)	NO	YES
5208	Recall control	1	YES
5209	Number of recall attempts	NO	YES
5210	Recall pause (seconds)	NO	YES
5211	Recall number	NO	YES
5212	Transfer allowed ?	NO	YES

53 Define authority level

5301	Define authority level	1	YES

54 Create facility

5401	Create route	NO	YES
5402	Create PBX-group	NO	YES
5403	Create music on hold	NO	YES
5404	Create background music	NO	YES
5405	Create call pickup code	NO	YES
5406	Create call pickup group	NO	YES
5407	Create ACD group	NO	YES
5408	Create voice answer	NO	YES
5409	Create FN series	NO	YES
5410	Create standard paging	NO	YES
5411	Create alternative paging	NO	YES
5412	Create Meet-me	NO	YES
5413	Create short number serie	NO	YES
5414	Create MFC test call number	NO	YES
5424	Create Automated Attendant	NO	YES
5425	Create DISA with password	NO	YES
5426	Create individual mailbox	NO	YES
5427	Create common mailbox	NO	YES
5428	Create CTI for autom. attendant	NO	YES
5431	Create Own Location Code	NO	YES
5432	Create Private Network acc	NO	YES

55 Delete facility

5501	Delete route	NO	YES
5502	Delete PBX-group	NO	YES
5503	Delete music on hold	NO	YES
5504	Delete background music	NO	YES
5505	Delete call pickup code	NO	YES
5506	Delete call pickup group	NO	YES
5507	Delete ACD group	NO	YES
5508	Delete voice answer	NO	YES
5509	Delete FN series	NO	YES
5510	Delete standard paging	NO	YES
5511	Delete alternative paging	NO	YES
5512	Delete Meet-me	NO	YES
5513	Delete short number serie	NO	YES
5514	Delete MFC test call number	NO	YES
5524	Delete Automated Attendant	NO	YES
5525	Delete DISA with password	NO	YES
5526	Delete individual mailbox	NO	YES
5527	Delete common mailbox	NO	YES
5528	Delete CTI for autom. attendant	NO	YES
5531	Delete Own Location Code	NO	YES
5532	Delete Private Network acc	NO	YES

56 Control of directory number

5601	Assign extension number	NO	YES
5602	Alter extension number	NO	YES
5603	Swap extension no. (on-line)	1	YES
5604	No-series ext (on-line)	NO	YES
5605	Assign trunk number	NO	YES
5606	Alter trunk number	NO	YES
5607	No-series trunk (on-line)	NO	YES
5608	Alter route number	NO	YES
5609	Alter PBX-group number	NO	YES
5610	Alter music on hold	NO	YES
5611	Alter background music	NO	YES
5612	Alter FN series	NO	YES
5613	Alter operator number	NO	YES

command number	command name	minimum required authority level from telephone	accessable via RASC
5614	Alter call pickup code	NO	YES
5615	Alter ACD-group number	NO	YES
5616	Alter voice answer number	NO	YES
5617	Alter standard paging	NO	YES
5618	Alter alternative paging	NO	YES
5619	Alter meet-me number	NO	YES
5620	Alter short number serie	NO	YES
5621	Define system access	1	YES
5622	Alter MFC test call number	NO	YES
5623	LCR directory number	1	YES
5624	Alter automated attendant	NO	YES
5625	Alter DISA with password	NO	YES
5626	Alter individual mailbox	NO	YES
5627	Alter common mailbox	NO	YES
5628	Alter CTI for autom. attendant	NO	YES
5629	Alter common bell	NO	YES
5630	Assign master-slave	NO	YES
5631	Alter Own Location Code	NO	YES
5632	Alter Private Network acc	NO	YES
5633	Assign Alarm Groups	NO	YES

57 Block directory number

5701	Block directory number	NO	YES

58 Show number plan

5801	Show total survey	1	YES
5802	Show extension	1	YES
5803	Show trunk	1	YES
5804	Show route	1	YES
5805	Show PBX group	1	YES
5806	Show background music	1	YES
5807	Show ACD-group	1	YES
5808	Show pick-up group	1	YES
5809	Show voice answer	1	YES
5810	Show FN series	1	YES
5811	Show operator	1	YES
5812	Show paging	1	YES
5813	Show short number serie	1	YES
5814	Show MFC test call number	NO	YES

59 Cross reference

5901	Dirno -> facility	0	YES
5902	Line position -> dirno	0	YES

60 I/O ports

6006	Device type	1	YES
6007	Characterset	1	YES
6009	Baudrate	1	YES
6010	Master/slave	1	YES
6011	Autoselect allowed?	1	YES
6012	Route on request	1	YES
6013	Dial attempts	1	YES
6014	Dialed number	1	YES
6015	Dial pause local (seconds)	1	YES
6016	Modem init string	1	YES
6017	Mode selection for serial IF	1	YES

61 Date & Time

6101	Set year month day	1	NO *
6102	Day ofweek	1	NO *
6103	Set hour minute second	1	NO *
6104	12 H mode display	1	NO

62 Common CIL paramater

6201	Log internal calls ?	NO	YES
6202	Log incoming calls ?	NO	YES
6203	Block log output ?	NO	YES
6204	Log sent digits ?	NO	YES
6205	Bar outgoing calls for guest ?	NO	YES

command number	command name	minimum required authority level from telephone	accessable via RASC

63 CIL paramater

6301	Log outgoing calls ?	NO	YES
6302	Log duration time	NO	YES
6303	Log minimum cost puls	NO	YES
6304	Bar outgoing calls ?	NO	YES
6305	Dialled number: suppress	NO	YES
6306	Log dialled number: 0 ?	NO	YES
6307	Log dialled number: 1 ?	NO	YES
6308	Log dialled number: 2 ?	NO	YES
6309	Log dialled number: 3 ?	NO	YES
6310	Log dialled number: 4 ?	NO	YES
6311	Log dialled number: 5 ?	NO	YES
6312	Log dialled number: 6 ?	NO	YES
6313	Log dialled number: 7 ?	NO	YES
6314	Log dialled number: 8 ?	NO	YES
6315	Log dialled number: 9 ?	NO	YES
6316	Accountcode acos 0 ?	NO	YES
6317	Accountcode acos 1 ?	NO	YES
6318	Accountcode acos 2 ?	NO	YES
6319	Accountcode acos 3 ?	NO	YES
6320	Accountcode acos 4 ?	NO	YES
6321	Accountcode acos 5 ?	NO	YES
6322	Accountcode acos 6 ?	NO	YES
6323	Accountcode acos 7 ?	NO	YES
6324	Accountcode acos 8 ?	NO	YES
6325	Accountcode acos 9 ?	NO	YES
6326	Accountcode acos 10 ?	NO	YES
6327	Accountcode acos 11 ?	NO	YES
6328	Accountcode acos 12 ?	NO	YES
6329	Accountcode acos 13 ?	NO	YES
6330	Accountcode acos 14 ?	NO	YES
6331	Accountcode acos 15 ?	NO	YES
6332	Log minimum cost	NO	YES

64 CIL/Hotel I/O command

6401	Initiate I/O ports	NO	YES
6402	Activate I/O ports ?	NO	YES
6403	Format table	NO	YES
6404	Lines/page	NO	YES
6405	I/O time supervision	NO	YES
6406	Automatic I/O activation	NO	YES
6431	Test protokol port address	YES	YES
6432	Enable test protocol	YES	YES

65 Administration data for dirno

6501	Administration data internal	1	YES
6502	List internal data	1	YES
6510	Administration data external	1	YES
6511	List external data	1	YES

66 Administration data for extension / trunk

6601	Admin. data for extension	1	YES
6602	Admin. data for trunk	NO	YES

67 Call Metering

See also command group 84.

6701	I/O port	1	YES
6702	Lines/page	1	YES
6703	Printout header 1	1	YES
6704	Printout header 2	1	YES
6705	Printout header 3	1	YES
6706	Printout header 4	1	YES
6710	Currency identifier	1	YES
6711	Decimals in cost	1	YES
6712	Currency ID last?	1	YES
6713	Cost limit	1	YES
6720	Password system	1	YES

command number	command name	minimum required authority level from telephone	accessable via RASC

68 Tenant name/psw

6801	Tenant name/psw:Name	NO	YES
6802	Tenant name/psw:Password	NO	YES
6803	Tenant name/psw:Tenant Route	NO	YES

69 Common bell extension

6901	Common bell extension	NO	YES

71 Hardware utility

7102	Update card position	1	NO *

74 Active alarm

7420	Service area id	NO	YES
7421	Identity of exchange	NO	YES
7430	Active alarm on ?	NO	YES
7431	Active alarm I/O port	NO	YES
7432	Active alarm receiver	NO	YES
7433	Active alarm via int modem ?	NO	YES
7434	Active alarm number	NO	YES
7435	Active alarm pause	NO	YES
7436	Active alarm attempts	NO	YES
7437	Maximum active alarm a day	NO	YES
7440	Heartbeat on ?	NO	YES
7441	Heartbeat I/O port	NO	YES
7442	Heartbeat receiver	NO	YES
7443	Heartbeat int modem ?	NO	YES
7444	Heartbeat number	NO	YES
7445	Heartbeat pause	NO	YES
7446	Heartbeat attempts	NO	YES
7447	Heartbeat pace	NO	YES

75 Traffic limit timer

7506	High traffic limit timer	NO	YES
7507	Maximum traffic limit timer	NO	YES

78 RSU - group reservation

7801	Register reservation	NO	YES

80 Hotel

8001	Room status change	1	YES
8002	Room to room bar	1	YES
8003	Room to room open	1	YES
8004	Hotel answering position	1	YES
8006	Wake-up ring time	1	YES
8007	Wake-up ring pause	1	YES
8008	Wake-up ring repeats	1	YES
8009	Wake-up language 1	1	YES
8010	Wake-up language 2	1	YES
8011	Wake-up language 3	1	YES
8012	Wake-up answer announcement 1	1	YES
8013	Wake-up answer announcement 2	1	YES
8014	Wake-up answer announcement 3	1	YES
8015	Wake-up order reference 1	1	YES
8016	Wake-up order reference 2	1	YES
8017	Wake-up order reference 3	1	YES
8018	Wake-up order time 1	1	YES
8019	Wake-up order time 2	1	YES
8020	Wake-up order time 3	1	YES
8021	RTR/DID time bar. status	1	YES
8030	Guest instrument key A	1	YES
8031	Guest instrument key B	1	YES
8032	Guest instrument key C	1	YES
8033	Guest instrument key D	1	YES
8034	Guest instrument key E	1	YES
8035	Guest instrument key F	1	YES
8036	Guest instrument key G	1	YES

command number	command name	minimum required authority level from telephone	accessable via RASC

81 Paging

8101	Number of paging digits	NO	YES
8102	Number of display digits	NO	YES
8103	Mode digit	NO	YES
8104	Paging absence ?	NO	YES
8105	Paging channel	NO	YES
8106	Display string	NO	YES
8107	End of paging number	NO	YES
8108	Maximum paging speech time	NO	YES
8109	Paging meet-me time	NO	YES
8110	Paging progress time	NO	YES
8112	Mode digit meet-me	NO	YES
8113	Mode digit external	NO	YES
8114	Mode digit call-me	NO	YES
8115	Mode digit group	NO	YES
8116	Mode digit display	NO	YES
8117	Mode digit speech	NO	YES
8118	Mode digit external call	NO	YES

82 Paging receiver

8201	Paging receiver dirno	1	YES
8202	Paging search code	1	YES
8203	Paging receiver type	1	YES

83 Reminder

8301	Reminder ringing time (sec.)	1	YES
8302	Reminder pause time (minutes)	1	YES
8303	Reminder attempts	1	YES
8304	Reminder answer announcem.	1	YES

84 Call Metering

8401	Internal access code	NO	YES
8402	Predigits for carrier access	NO	YES
8403	Billing principle	NO	YES
8405	Detecting carrier access codes	NO	YES
8410	Destination number to send	NO	YES
8415	Arranging number to be send	NO	YES
8420	Carrier open	1	YES
8421	Account code	1	YES
8422	Authority code	1	YES
8424	Pulse cost metering	1	YES
8425	Discount factor LCR %	NO	YES
8430	Customer tariff 0	NO	YES
8431	Customer tariff 1	NO	YES
8432	Customer tariff 2	NO	YES
8433	Customer tariff 3	NO	YES
8434	Customer tariff 4	NO	YES
8435	Customer tariff 5	NO	YES
8440	Destination number group call cost profile	NO	YES
8445	Cost time scheme (list price)	NO	YES
8450	Cost time scheme (spec. price)	NO	YES
8455	Pulse cost level def. (list price)	NO	YES
8460	Pulse cost lev. def. (spec.price)	NO	YES
8465	Dur. time cost lev.def. (list price)	NO	YES
8470	Duration time cost level definition (special price)	NO	YES

85 Message group parameters

8501	Individual message welcome, stroing; Welcome 1	1	YES
8502	Individual message welcome, stroing; Play directory number	1	YES
8503	Individual message welcome, stroing; Welcome 2	1	YES
8507	Common mailbox welcome, storing; Welcome 1	1	YES
8508	Common mailbox welcome, storing; Welcome language 2	1	YES
8509	Common mailbox welcome, storing; Welcome language 3	1	YES
8510	Individual message welcome, retrieving; Welcome	1	YES
8511	Common mailbox welcome, retrieving; Welcome	1	YES
8512	Exit position for individual message	1	YES

command number	command name	minimum required authority level from telephone	accessable via RASC

86 Message guest paramaters

8601	Storing: Welcome 1	NO	YES
8602	Storing: Play directory number	NO	YES
8603	Storing: Welcome 2	NO	YES
8604	Retrieving: Welcome	NO	YES

87 Automated Attendant

8701	Automated Attendant general announcement reference	1	YES
8702	Automated Attendant error announcement reference	1	YES
8703	Digit 0 related directory number	1	YES
8704	Digit 1 related directory number	1	YES
8705	Digit 2 related directory number	1	YES
8706	Digit 3 related directory number	1	YES
8707	Digit 4 related directory number	1	YES
8708	Digit 5 related directory number	1	YES
8709	Digit 6 related directory number	1	YES
8710	Digit 7 related directory number	1	YES
8711	Digit 8 related directory number	1	YES
8712	Digit 9 related directory number	1	YES
8713	AA error reroute position	1	YES
8714	Waiting for full directory number	1	YES
8730	Greeting announcement ref.	NO	YES
8731	Instruction announcement ref.	NO	YES
8732	Error announcement reference	NO	YES
8733	Default exit position	NO	YES
8734	Use AA in combination with ACD group	NO	YES

88 DISA with password control

8801	DISA exit position	NO	YES

89 CTI I/O port

8901	CTI port	1	YES
8902	CTI route timeout	NO	YES

90 Network call back

9001	Call setup version at network call back	NO	YES
9002	Active time for call back on busy in initiating PBX (T1)	NO	YES
9003	Active time for call back on free in initiating PBX (T1)	NO	YES
9004	Active time for call back on busy in supervised PBX (T2)	NO	YES
9005	Active time for call back on free in supervised PBX (T2)	NO	YES
9006	Maximal ringing time at the init. extension for call back calls	NO	YES

91 Private network router

9101	Destination PBX	NO	YES
9102	Call back allowed ?	NO	YES
9103	TON / private calling	NO	YES
9104	Call class	NO	YES
9110	1-st. route choice	NO	YES
9111	TON: priv/pub called, 1	NO	YES
9112	Remove digits choice 1	NO	YES
9113	Predigits choice 1	NO	YES
9114	Travelling Class Mark (TCM), 1	NO	YES
9115	Complete called party NL, 1	NO	YES
9116	Subscriber called party NL, 1	NO	YES
9120	2-nd. route choice	NO	YES
9121	TON: priv/pub called, 2	NO	YES
9122	Remove digits choice 2	NO	YES
9123	Predigits choice 2	NO	YES
9124	Travelling Class Mark (TCM), 2	NO	YES
9125	Complete called party NL, 2	NO	YES
9126	Subscriber called party NL, 2	NO	YES
9130	3-rd. route choice	NO	YES
9131	TON: priv/pub called (3)	NO	YES
9132	Remove digits choice 3	NO	YES
9133	Predigits for the third route	NO	YES

command number	command name	minimum required authority level from telephone	accessable via RASC
9134	Travelling Class Mark (3)	NO	YES
9135	Complete called party NL, 3	NO	YES
9136	Subscriber called party NL, 3	NO	YES
9140	4-th.route choice	NO	YES
9141	TON: priv/pub called (4)	NO	YES
9142	Remove digits choice 4	NO	YES
9143	Predigits for the forth route	NO	YES
9144	Travelling Class Mark (4)	NO	YES
9145	Complete called party NL, 4	NO	YES
9146	Subscriber called party NL, 4	NO	YES

* It is possible to programm this command also via RASC but only in the APPLICATION "MAINTENANCE" and it is not possible to find this command with the search function " F3 ".

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
SEA/TB/MP M.Plattner	**SEA/TB/XE**	**100/155 34-ASB 150 02 Uen**	
Dokansv/Godkänd - Doc respons/Approved	Kontr/Checked	Datum/Date / Rev	Tillhör/Referens-File/Reference
SEA/TB/MP		**97-03-05** **B**	**ASB 150 02**
		Database reference	
		100.fm	

A-NUMBER TRANSFER VIA MFC

Definition

In some countries where MFC signalling is used, the public network also provides the A-number to the customer.

In this case the A-number of the external party is shown on the system telephones.

Use

A-Number transfer via MFC is used to show the number of the external calling party on the display.

Operation

If the public network provides the A-number, in case of an incoming call the number of the calling party will be presented on the display of the telephone.

EXECUTIVE Telephone

```
10 Feb 14:40   +15°
            222811003765         CALLING
directory              redial     prog
```

STANDARD Telephone

```
10 Jul 14:40   +15°
   222811003765   C
```

If the public network does not provide the A-number of the calling party, only the trunk number will be shown.

EXECUTIVE Telephone

```
10 Feb 14:40   +15°
EXTERNAL      701               CALLING
directory              redial     prog
```

STANDARD Telephone

```
10 Jul 14:40   +15°
EXTERNAL   701   C
```

Capacity

It depends on the programming of the actual used trunk line and on it's public subscriber number how the A-number is displayed. 32 different public numbers can be assigned to the trunks. Up to 16 digits can be programmed per public number.

Limitations

For MFC only the A-number of the calling party will be send out. In case of an incoming call the number of the connected party will not be sent out.

To program a public directory number only digits 0 - 9 are valid.

DISA

In case of DISA the external caller has to state his internal directory number and also a password.

When the external caller builds up an external call again, the entered internal directory number will be used in the A-number which will be sent out to the public net.

The accumulated costs for each call will be assigned to the entered extension number.

Simplified DISA for Denmark

If an external caller, answered by the simplified DISA function builds up a new external call the public number of the outgoing trunk will be used in the A-number which will be sent out to the public net.

The accumulated costs for the transferred call will be assigned to the incoming trunk.

Transfer of an incoming external call to another external destination

The directory number of the extension which build up the second external call and the transfer, will be used in the A-number which will be sent out to the public net.

The accumulated costs for the transferred call will be assigned to the orginator.

Connecting of two outgoing external calls

The directory number which connected the two outgoing lines will be used on both lines in the A-number which will be sent out to the public network.

The accumulated costs on both lines will be assigned to the orginator of the trunk-trunk connection.

Tie line traffic

If an outgoing external call is built up by a tie line to a subsystem, the incoming tie line number will be used in the A-number which will be sent out to the public network.

The accumulated costs for the transit call will be assigned to the tie line.

External call diversion / follow me using a common abbreviated number

In case of an incoming call to an external diverted extension the directory number of the diverting extension will be used on both lines in the number which will be sent out to the public network.

The accumulated costs for the outgoing line will be assigned to the diverting extension.

Programming

On system level we define a table with up to 32 different public numbers (command 2220) which will be used in case of outgoing calls; one public number per number group. In addition the type of the programmed number has to be specified (national, subscriber,...). Which number type has to be sent out depends on the public network. With the information on the individual trunk about the trunk number group it is possible to find the corresponding public number in the table. Finally the opposite parties directory number will be added.

0169
Directory number subscribed ?

Directory number in subscribed PSTN series ?

This command states if the internal programmed directory number of the extension is in the subscribed PSTN number series range.
If the directory number is not in the number range a common number, defined by command 1801, is used in case of A- or B-number sending.

Commands executable only via RASC

1801
Incoming common number at automatic incoming traffic

The command is used to state the incoming number that shall be translated to the answer position for the line.
Furthermore this number is used to build up the public number that is sent out to the line as A (calling) or B (called / connected) number in cases where the internal number is not subscribed in the PSTN-net.

valid data: 1 - 4 digits

2220
Public directory numbers

Up to 32 public directory numbers can be programmed. In addition the number type has to be specified.

Type of number:

- Subscriber
  The prog. digits contain the public subscriber number.
- National
  The prog. digits contain the public destination number and the subscriber number.
- International
  The prog. digits contain the country code, public destination number and the subscriber number.
- Unknown
  Only direct indialling digits are programmed.
- Network specific
  The content of the digits programmed depends on the respective network operator.

1030
Public number group

This command specifies for each trunk individual to which public number group it belongs to.

default data	group 0
valid data	group 0 - group 31

1312
MFC signal scheme

This command is used to state signalling type for MFC register signalling.

Equipment

The A-Number transfer via MFC function can be used with a BTU-A together with REG (4 MFC and MFE registers) or a BTU-D (4 MFC registers).

Use tie-lines with a BTU-C or BTU-E.

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
SEA/EBBMP Pfleger H.	SEA/EBBX/E	101/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved	Kontr/Checked	Datum/Date / Rev	Tillhör/Referens-File/Reference
SEA/EBBMP		99-07-15 / E	ASB 150 02
		Database reference	
		101.fm	

ABBREVIATED NUMBER DIALLING - COMMON NUMBERS

Definition

Abbreviated number dialling means that the number of an internal or external caller is stored in the memory and called by pressing a key or by dialling the directory number.

Use

External numbers of common interest for a majority of extensions are stored as common abbreviated numbers.

Abbreviated numbers are easy to remember and simplify the procedure for calls to subscribers with lengthy numbers.

As it is not possible to analyse common abbreviated numbers by the TCD-facility (see "TRUNK CALL DISCRIMINATION (TCD)", document 487/155 34-ASB 150 02 Uen) extensions may call selected telephone numbers whose area codes are normally blocked for these extensions.

Incomplete abbreviated numbers

An abbreviated number can also be stored as "incomplete", for example all digits can be stored except the extension number itself in a DID-number.

The caller can then her-/himself dial the complementing digits or another programmed abbreviated number.

Diversion to an abbreviated number

Diversion direct to an abbreviated number is allowed from a physical extension, but not from a fictive number.

See also the following documents:

"DIVERSION DIRECT", document 165/155 34-ASB 150 02 Uen.

"FICTIVE NUMBER", document 201/155 34-ASB 150 02 Uen.

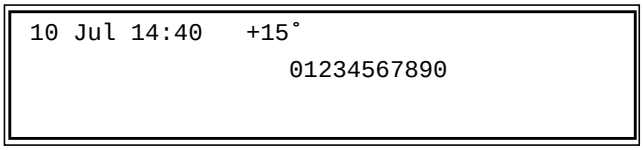
Operation

Digital telephones

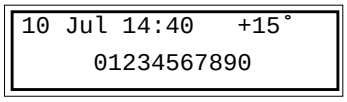
- Dial the relevant abbreviated number
- **Line 1**, **Line 2** (not available on BASIC Telephone) or **Inquiry** is seized.
  Lamp flashes to confirm connection
- Stored number is transmitted.
  Trunk is selected on the basis of the programmed route access code. If pause for dial tone has been inserted, number transmission is halted until tone is detected.

A telephone with display shows the stored number:

EXECUTIVE Telephone



STANDARD Telephone



Abbreviated number with suffix dialling

The user can complement all abbreviated numbers with more digits, which are dialled directly on the key set.

If several abbreviated numbers are to be dialled in succession, these need to be separated by depression of **2nd** and **+** key.

ANALOGUE Telephones

- Lift handset
- Await dial tone
- Dial relevant abbreviated number.
  Stored number is transmitted

Capacity

Up to 16 number series can be defined for common abbreviated numbers.

The number of abbreviated numbers is restricted solely by the available E2PROM capacity, but it is possible to program at least 1000 numbers.

Each abbreviated number can have a maximum of 23 digits including intermediate tones and trunk access number (Up to ASB 150 02 R9 each abbreviated number can have 17 digits).

Limitations

Callers must have an abbreviated number dialling category that permits access to the relevant abbreviated number.

Common abbreviated numbers are checked by the traffic group matrix and are not subject to analysis by the TCD (Trunk Call Discrimination)-function.

Abbreviated numbers can be stored on name selection keys.

Programming

Abbreviated number series

These commands are only accessable via RASC:

5413
Create directory number series for abbreviated numbers

All short numbers require a creation procedure, which means entering the first few digits of the series to be created. The number series is marked with a hyphen (-).

Examples:

- 602 = 602
- 61- = 610 - 619
- 62-- = 6200 - 6299
- 5--- = 5000 - 5999

5513
Delete directoryt number series for abbreviated numbers

This command erases an existing number series.

5620
Alteration of directory number series for abbreviated numbers

This command changes an existing short number series.

5813
Show abbreviated number series for abbreviated numbers

This command is used to read which abbreviated number series have been programmed.

See also "DIRECTORY NUMBERS", document 163/155 34-ASB 150 02 Uen.

6510
Administrative data for short numbers

This menu is used to create, alter or delete a data record containing administrative data. The data record is assigned to a number. This number can be any number with a maximum of four digits containing the "digits" 0-9,* and #. Only data records which contain numbers corresponding to defined directory numbers can be used by the system. In this case "directory number" denotes not only extension numbers, but all defined directory numbers according to command group 58. A maximum of 250 data records may be stored in the system. This menu contains a list showing administrative data. The list is classified according to directory numbers and comprises two columns :

tel directory number (may be changed)

name data record containing administrative information (may be changed). Each data record may contain a maximum of 35 characters. A record can consist of several fields that are separated by one or more spaces. One or more initial spaces means that the first field is blank.
The system presupposes that the first two fields are name strings. Double names are to be separated by a hyphen (-).
The name searching facility takes telephone numbers and names from these data records. In certain traffic situations the directory number and the corresponding name are shown on telephones with display. In these states, normally only 12 positions are reserved for the name, and consequently long names cannot be shown fully and thus are automatically shortened.

Example

GRETA GARBO is printed out GRETA GARBO

HUMPHREY BOGART is printed out HUMPHREY B

GARBO GRETA is printed out GARBO GRETA

BOGART HUMPHREY is printed out BOGART H

GLOUCESTERSHIRE is print. out GLOUCESTERSH

Function keys :

ID This key displays a menu designed to make it easy for the user to select the directory number to be displayed in the top row of the menu. This feature is useful when the list is longer than the menu, and thus using the up/down-arrows is ineffective.

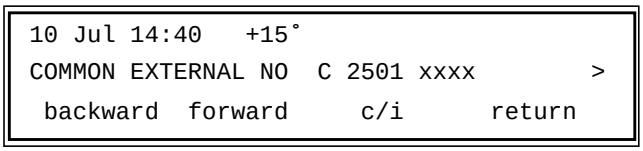
INSERT This key inserts a new row after the row where the cursor is located. Enter the new number and press RETURN to confirm.

DELETE This key deletes the row pointed out by the cursor.

Abbreviated number table

2501
Programming of abbreviated numbers

Each common abbreviated number is programmed in an abbreviated number table.



xxxx Enter directory number for short number.
Press **Enter.**
Enter relevant abbreviated number, maximum 23 digits (**1**-**9**, **0**, *****, **#**).
Default data = No number

Wait for intermediate tone by keying **2nd** and **2** (via RASC, press the "-"-key).

An existing abbreviated number is erased by pressing the **-**-key. This key can also be used as backspace during programming of an abbreviated number.

Categorisation of abbreviated numbers

2502 - 2505
Categorisation

For each abbreviated number it can be stated for which abbreviated number categories (0 - 3) each individual abbreviated number shall be available.

```
10 Jul 14:40   +15°
OPEN F. SHRT COS 0?   2502 xxxx       z
 backward  forward     c/i      return
```

xxxx Enter directory number

z Enter the relevant function.
Y = Open for category 0.
N = Blocked for category 0 (default data)

Repeat the procedure for categories 1 - 3.

Commands 2503 - 2505.

0105
Abbreviated number category

Each extension can be assigned an abbreviated number category.

```
10 Jul 14:40   +15°
COMMON SHORT NO COS   0105 xxxx          z
 backward  forward     c/i      return
```

xxxx Enter extension's directory number.

z Enter relevant category (0 - 3).
Default data = 0

2801
Short no open for tenant

Command 2801 specifies for which tenant groups the chosen short number series is open/closed.

This command is only accessable via RASC:

1005
Abbreviated number category for trunks

Each trunk can be assigned a abbreviated number category.

Equipment

None.

ABBREVIATED NUMBER DIALLING - INDIVIDUAL NUMBERS

Definition

Individual abbreviated number denotes an abbreviated number that the extension user can program her-/ himself.

Use

Individual abbreviated numbers are of great benefit for extensions with frequent external calls to subscribers not included in the common abbreviated numbers table.

Operation

Depending on the phone, there are 2 kinds of "individual abbreviated number dialling" possibilities:

1 Users of ECONOMYplus, STANDARD, EXECUTIVE Telephones or OPERATOR's Consoles have access to "Individual abbreviated number dialling via the secondary-function of a programmable key".

2 Users of Analogue, BASIC, ECONOMY or STANDARD Telephones have access to "Individual abbreviated number dialling via the key pad".

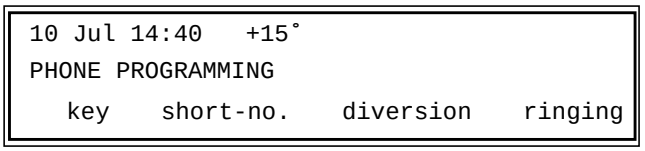
Individual abbreviated number dialling via a programmable key

Programming

Programming on EXECUTIVE Telephone and OPERATOR Console

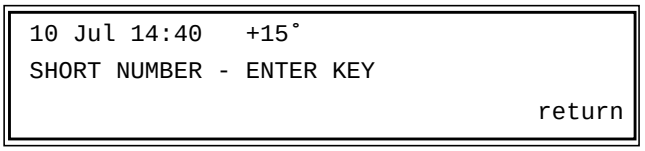
- Press " * 0 0 * " or press the menu key "prog".

  EXECUTIVE Telephone



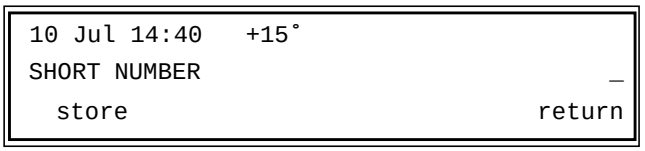
- Press "short-no."

  EXECUTIVE Telephone



- Press the desired key

  EXECUTIVE Telephone



- Dial the external number, including the trunk route access number (max. 24 digits)
  - press ("2nd" and "2") to include "wait for second dial tone"
  - press "-" key to delete the number
- Press "store"

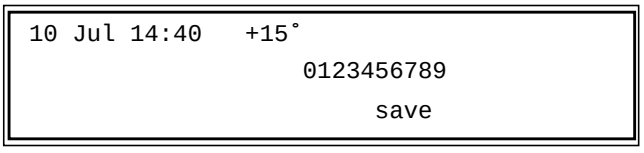
Programming on STANDARD and ECONOMYplus Telephones

- Press " * 0 0 * "
- Press 2nd -key
- Press the desired key
- Dial external number, including the trunk route access number (max. 24 digits)
  - press "2nd" and "2" to include "wait for second dial tone"
  - press "-" key to delete the number
- Press the desired key once again
- Press C -key to terminate programming

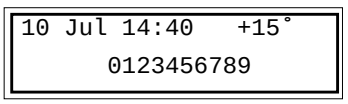
Outgoing calls

- Press **2nd** -key and relevant abbreviated number key. The abbreviated number key has to be pressed within 8 seconds after **2nd**-key has been depressed.
- Free **Line** key is seized and associated lamp flickers as confirmation
- Stored number is transmitted
- If the system telephone has a display, it will show the stored number.

EXECUTIVE Telephone



STANDARD Telephone



Individual abbreviated number dialling via the key pad:

Programming

An individual abbreviated number can be programmed by pressing the following key sequence:

✳ 5 1 ✳	Press
◯	Dial the abbreviated number digit, keys 0 - 9
✳	Press and dial the external number (max. 24 digits; press ("2nd" and "2") or (" * ") to include "wait for second dial tone")
#	Press

A specific individual abbreviated number can be deleted by pressing the following key sequence:

# 5 1 ✳	Press
◯	Dial the abbreviated number digit, keys 0 - 9
#	Press

All individual abbreviated numbers can be deleted by pressing the following key sequence:

(#) (5) (1) (#) Press

Outgoing calls

- Press " * * " and then a key from 0 to 9
  The procedures are from " **0 " to " **9 ".
- Free **Line** key is seized and associated lamp flickers as confirmation
- Stored number is transmitted
- If the system telephone has a display, it will show the stored number.

Capacity

Each abbreviated number can have 24 digits including intermediate tones and trunk access number.
(Up to ASB 150 02 R9 each abbreviated number can have 18 digits)

On the ECONOMYplus (DBC 211) and STANDARD (DBC 212) Telephone the user has access to the individual abbreviated numbers via programmable keys as well as via the keypad.

Individual abbreviated number dialling via a programmable key

The number of individual abbreviated numbers depends on the number of common abbreviated numbers and other programmable functions in the system.

Maximum number of programmable keys with 2nd - function:

- BASIC DBC 210 = 0
- ECONOMYplus DBC 211 = 4
- STANDARD DBC 212 = 4
- EXECUTIVE DBC 213 = 14
- OPERATOR DBC 214 = 3
- KEY PANEL = 17

Old telephones:

- BASIC DBC 199 = 0
- ECONOMY DBC 601 = 0
- ECONOMY DBC 751 = 0
- STANDARD DBC 631 = 10
- STANDARD DBC 755 = 10
- EXECUTIVE DBC 662 = 30
- EXECUTIVE DBC 753 = 30
- OPERATOR DBC 663 = 20
- OPERATOR DBC 754 = 20

Individual abbreviated number dialling via the key pad

Up to 10 individual abbreviated numbers per telephone can be programmed (" * * 0 " - " * * 9 ").

Limitations

Individual abbreviated numbers are checked by the traffic group matrix and are also subject to analysis by the TCD-function.

Individual abbreviated number dialling via the key pad

" * " and " # " cannot be included in the abbreviated number via programming from the telephone, but only via programming via RASC.

Programming

0202
Assignment of individual abbreviated numbers

This command defines the amount of individual abbreviated numbers which shall be assigned to the extension. Individual abbreviated numbers are assigned in groups of four numbers. The table below shows the maximum number of groups which can be assigned to the different type of telephones.

```
10 Jul 14:40   +15°
NO.OF IND. SHORT NO    0202   xxxx        z
 backward   forward      c/i        return
```

xxxx Enter the extension's directory number

z Number of group (0 - 21).
Default data = 0

The following data is to be programmed, if all keys on the telephone shall be used:

Telephone types		via prog. key	via key pad
Analogue		**-**	**4**
BASIC	**DBC 199**	**-**	**4**
BASIC	**DBC 210**	**-**	**4**
ECONOMY	**DBC 751**	**-**	**4**
ECONOMY	**DBC 601**	**-**	**4**
ECONOMYplus	**DBC 211**	**1**	**4 ***
STANDARD	**DBC 755**	**3**	**-**
STANDARD	**DBC 631**	**3**	**-**
STANDARD	**DBC 212**	**1**	**4 ***
EXECUTIVE	**DBC 753**	**8**	**-**
EXECUTIVE	**DBC 662**	**8**	**-**
EXECUTIVE	**DBC 213, no key panel**	**4**	**-**
EXECUTIVE	**DBC 213, 1 key panel**	**8**	**-**
EXECUTIVE	**DBC 213, 2 key panels**	**12**	**-**
EXECUTIVE	**DBC 213, 3 key panels**	**17**	**-**
EXECUTIVE	**DBC 213, 4 key panels**	**21**	**-**
OPERATOR	**DBC 754**	**5**	**-**
OPERATOR	**DBC 663**	**5**	**-**
OPERATOR	**DBC 214, no key panel**	**1**	**-**
OPERATOR	**DBC 214, 1 key panel**	**8**	**-**
OPERATOR	**DBC 214, 2 key panels**	**12**	**-**
OPERATOR	**DBC 214, 3 key panels**	**17**	**-**
OPERATOR	**DBC 214, 4 key panels**	**21**	**-**

* Includes also the access to the abbreviated numbers via the programmable keys

Individual abbreviated number dialling via a programmable key

0401
Programming individual abbreviated numbers

Via this command the individual abbreviated numbers can also be programmed via system programming

```
10 Jul 14:40   +15°
INDIVIDUAL SHORT NO   0401 xxxx yy       >
 backward  forward     c/i      return
```

xxxx Enter the extension's directory number

y Press the respective key (01 - 82)
Press **Enter**

```
10 Jul 14:40   +15°
   zzzzzzzzzzzzzzzz  0401   xxxx     yy
 backward  forward     c/i      return
```

zz..z Enter the abbreviated number, 1 - 24 digits including intermediate tones and trunk route number.

Press **2nd** and **2** to indicate intermediate tone.

Entered number is erased with **-** -key

Individual abbreviated number dialling via the key pad

0401
Programming individual abbreviated numbers

Via this command the individual abbreviated numbers can be programmed.

```
10 Jul 14:40   +15°
INDIVIDUAL SHORT NO   0401 xxxx yy       >
 backward  forward     c/i      return
```

xxxx Enter the extension's directory number

y Press the respective key (05 - 14)

Procedures related to the following keys:

**1	key 05	(= respective prog. key E)
**2	key 06	(= respective prog. key F)
**3	key 07	(= respective prog. key G)
**4	key 08	(= respective prog. key H)
**5	key 09	(= respective prog. key I)
**6	key 10	(= respective prog. key J)
**7	key 11	(= respective prog. key K)
**8	key 12	(= respective prog. key L)
**9	key 13	(= respective prog. key M)
**0	key 14	(= respective prog. key N)

Press **Enter**

```
10 Jul 14:40   +15°
   zzzzzzzzzzzzzzzz  0401   xxxx     yy
 backward  forward     c/i      return
```

zz..z Enter the abbreviated number, 1 - 24 digits including intermediate tones and trunk route number.

Press **2nd** and **2** to indicate intermediate tone.

Entered number is erased with **-** -key

Equipment

Individual abbreviated number dialling via a dedicated key:

ECONOMYplus-, STANDARD-, EXECUTIVE Telephone or OPERATOR's Console.

Individual abbreviated number dialling via the key pad:

Analogue-, BASIC-, ECONOMY- or STANDARD Telephone.

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
SEA/TB/MP T.Preißner	SEA/TB/X	103/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved: SEA/TB/MP	Kontr/Checked	Datum/Date: 98-01-27	Rev: A
		Tillhör/Referens-File/Reference: ASB 150 02	
		Database reference: 103.fm	

ACCOUNT NUMBER

Definition

An account number is information that the extension user initiates for each call. The account number is transferred in the call record to a connected Call Information Logging (CIL)-unit.

Account numbers can be made mandatory for calls to selected trunks from groups of extensions.

Use

An account number can be utilised in all activities for which it is desired to debit telephone costs to different accounts.

A typical example is a firm of lawyers where costs are to be debited to the accounts of the various clients.

The function can also be used for incoming traffic. One example is that a travel agency can register different types of orders and inquiries.

It is possible to make an account number mandatory, i.e. in order to make an external call extension users must dial a code.

See also facility description
CALL INFORAMTION LOGGING (CIL) FUNCTION, document 140/155 34-ASB 150 02 Uen.

Operation

An account number can be inserted before the external number is dialled or during the call.

For calls to trunks, for which an account number is mandatory, the number must always be inserted before the route number. To facilitate the entry of an account number during a call, a programmable key for this function is required.

All telephones

In idle state the account number is entered by dialling the number.

*** 9 *** Account number #

Internal dial tone is received as confirmation whereafter the extension can dial the route access code and external subscriber number.

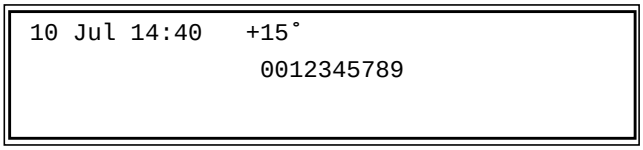
An attempt to dial an external number on a trunk for which an account number is mandatory will encounter congestion tone.

ECONOMYplus -, STANDARD - and EXECUTIVE telephones and OPERATOR CONSOLE

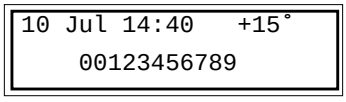
With these telephones an account number can also be entered during a call provided that a key has been programmed for the function.

- Press programmed key
- Dial account number on key set
- Press #-key
  Telephone with display shows dialled digit

EXECUTIVE telephone



STANDARD telephone



NOTE: To enter account numbers from an OPERATOR console is possible both for outgoing and incoming traffic, but only when the OPERATOR is speaking to an external party.

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
		103/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved	Kontr/Checked	Datum/Date	Rev / Tillhör/Referens-File/Reference
		98-01-27	A

Capacity

Account numbers can be entered for all external calls. The length of each account number is an optional 1 - 15 digits.

Limitations

To be able to enter account numbers during calls, both outgoing and incoming traffic requires a programmable key.

NOTE: The system does not verify whether the dialled account number is correct.

Programming

6316 - 6331
Account code acos

For every trunk line and facility category (ACOS 0-15) it can be stated, if the extension has to use an account code or not.

0301
Function of key

Key for activation of account number

```
10 Jul 14:40   +15°
FUNCTION OF KEY       0301 xxxx yy    zz
 backward  forward     c/i      return
```

xxxx	Enter extension's directory number.
yy	Enter selected programmable key (00 - 48)
zz	Enter function code = 30

Individual programming

A key can also be programmed via individual programming.

See document FACILITY DESCRIPTION (155 34-ASB 150 02 Uen).

Equipment

To benefit from the account number function it is necessary to equip the system for e.g. ERICSSON CALL ACCOUNT MANAGER.

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr		
SEA/EBBMP C. Bertsch	SEA/EBBX/E	104/155 34-ASB 150 02 Uen		
Dokansv/Godkänd - Doc respons/Approved	Kontr/Checked	Datum/Date	Rev	Tillhör/Referens-File/Reference
SEA/EBBMP		99-07-15	C	ASB 150 02
		Database reference		
		104.fm		

ACD-SYSTEM

Contents **Page**

ACD - INTRODUCTION 2

GLOSSARY 5

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
		104/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved	Kontr/Checked	Datum/Date	Rev / Tillhör/Referens-File/Reference
		99-07-15	C

ACD - INTRODUCTION

Definition

The ACD (Automatic Call Distribution) system of the ASB 15002 automatically distributes calls to supervised groups of agents answering incoming calls on assigned ACD-numbers. Incoming calls are handled efficiently on a First-In-First-Out basis (FIFO), and if applicable, according to which agent has been free the longest. Each agent has a dedicated position equipped with a system telephone.

Agents' supervisor has a dedicated position that includes a system telephone that enables access and supervision of agents within each individual supervisor's area of responsibility. The supervisor position can also supervise ACD traffic on the telephone display or on an advanced level through PC based ACD Management System (ACD-MS).

ACD (Automatic Call Distribution) is a function for a fair distribution of incoming traffic to a number of answering positions.

Each answering position is served by an (active-marked) agent.

Glossary

See page 4.

Use

ACD facility is ideal for companies needing to direct large numbers of incoming calls to specific departments. The facility is fully integrated, which means that ACD staff easily can be relocated as well as be reassigned. Integration also means that all PBX facilities are available to the ACD agents as well as to the rest of the company staff.

The ACD-function is particularly valuable for applications with a large number of incoming calls and where the queue order is important.

Typical examples of branches are:

- Travel agencies
- Booking centres
- Information centres
- Mail order companies
- Taxi
- Telemarketing
- Customer services
- Field support

Connection of equipment for ACD traffic monitoring and processing of statistics

A PC can be connected to ASB 150 02 for monitoring ACD traffic, agent status and processing statistics.

Two different software packages are available:

- Call Centre Supervisor (CCS) Standard Edition
- Call Centre Supervisor (CCS) Basic Edition

Although the programs offer different performance levels the same hardware interface, a V.24 port (RS232C) on the AUX board, in the PBX is used.

To facilitate connection of this external unit it is necessary to program the system and install certain hardware for connection.

The PC-equipment must be also specified in details for both packages in order to guarantee function.

For detailed information about this programming, see document *START OF OPERATION* (2/1537-ASB 150 02 Uen).

Capacity

The ACD-function can be divided into as many as eight call queues with different access (call) numbers.

As many as 40 agents can serve the programmed queues.

Each agent group can contain an optional number of agents.

Agents can answer all queues if programmed in this way.

The individual queues can, for each agent, be assigned an individual priority. An agent who is designated to give a certain queue priority can, if there are tem-

porarily no calls in this queue, answer calls from other queues.

The total number of trunk lines should not exceed 50.

Limitations

ACD-calls can only seize one of **Line 1** or **Line 2**. Thus, one line is always open for other incoming or outgoing calls.

The PBX-operator telephone cannot be used as an ACD-agent telephone.

Call classification requires CCS Standard or Basic Edition.

Log on with authorisation code (PIN) requires CCS.

Only one external PC-based program for ACD-monitoring and statistics can be connected per ASB 150 02 system.

Only one VMU-D, VMU-HD or MFU board per system can be used for ACD-voice messages, etc. The storage capacity is approximately 8 minutes for VMU-D or MFU board and 18 hours for VMU-HD.

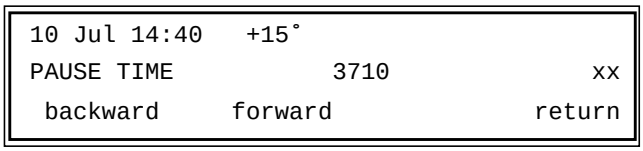
If the PBX is equipped with DID, (Direct Inward Dialling) ACD-groups may not be called via DID. Each ACD-group must have its own programmed trunks. This is essential, to prevent the PBX from being blocked by non ACD-traffic.

Programming

3710
Pause time

By means of this command it is possible to define the time-out limit for the ACD-pause after which the agent in pause status will be automatically logged-off from the system.

The time for pause state is in minutes. The timer for the time-out limit starts by pressing the ACD pause key. If the agent handles a non-ACD call during the ACD pause the timer will be stopped and re-triggered after the call has been finished. The pause time starts once again after disconnection of the call.

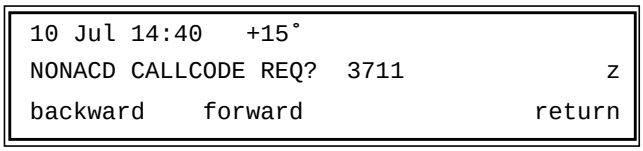


xx enter the time in minutes, after which an active agent in pause state will automatically be logged off. The value can be between 1 - 30.

The default value is 5 min.

3711
Non ACD call code request?

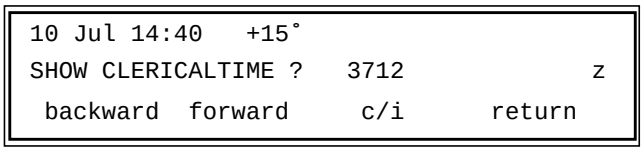
This is used to state whether the ACD-agent has to enter a call code after disconnection of an outgoing external non-ACD call.



z z=Yes, the agent has to enter call codes for non-ACD calls
z=No, no call code has to be entered for non-ACD calls (default value)

3712
Display clerical time?

This command is used to specify whether or not the remaining / elapsing clerical time shall be shown on the display.



z Yes / No

The default value is No (clerical time is not displayed)

Equipment

To use the features that ACD system offers, STANDARD, ECONOMYplus and EXECUTIVE telephones can be used as agent’s telephone.

GLOSSARY

ACD-group A group of agents with programmed answer keys for one of the ACD-queues.

ACD-MS The interface in the PBX that supports the advanced monitoring and statistics processing program(s) for ACD-applications.
ACD-MS V.0 = Interface valid till R7.
ACD-MS V.1 = Interface valid since R8.
ACD-MS V.2 = Interface valid since R9.

Active agent An agent that has logged on to one ore more (maximum 8) ACD-queue(s).

Agent Any extension having at least one programmed ACD-answer key.

Agent group Any group of agents. Only applicable within an CCS Standard system.

Agent number A number used to distinguish between the different agents and is equivalent with the individual agent greeting announcement reference number.

Alarms Values that can be set for the states and statistics on CCS system.
When the value is reached an alarm is shown on the screen.

Call Centre Supervisor (CCS) A PC-based system application for supervising an ACD-system. The CCS system presents the supervisor with real time information and statistical data regarding ACD-calls.
Available CCS systems are CCS Standard and CCS Basic

Call Centre Assistant (CCA) CCA is a server/client based Agent application providing graphical user interface for ACD-agents/supervisors.
CCA is a CTI software based on BusinessLink for Windows NT.

Call code A code dialled by the agent and sent to the CCS system. The codes can be given any meaning and are stored in the CCS system. It is possible to classify calls with more than one call code.

Clerical key A key on an agent telephone used for initiating a clerical period.

Clerical time The time between two calls that the agent may use for other purposes. Clerical time may be common or individual. The clerical time can be displayed on the telephone display.

Dynamic queue A queue which length changes due to the change of the number of agents that are logged on to the ACD-group.

Greeting message A pre-recorded greeting message played when the agent answers a call.

Help-key A key used by an agent to discretely inform the supervisor of a needed assist.

Immediate Agent answer key may be programmed as immediate speech. Calls will then never ring, but be presented just by a short tone burst before connection is established.

Passive agent An agent that has logged off from all ACD-queues.

Pause-key A key on an agent telephone used to initiate and stop a job interruption for a certain time without logging off from the system.

PES Personal Efficiency System is an equipment with state information about calls handled by one extension. It is based on TAPI standard (e.g. DTM).

PIN Personal Identity Number. A code used by the agent to log on to the system. A PIN is only useful when the system has a connected CCS system.

Priority — If an agent answers several queues, a priority between the queues may be programmed.

Queue — Each ACD-call number has a queue where calls are queued when there are no free agents available.

Queue message — A pre-recorded voice message that can be played to the caller. Two messages can be recorded per queue.

Real time presentation — A function in a CCS system, where the ongoing activities within the ACD-group, are shown on the screen in real time.

Silent intrusion — The supervisor may at any time intrude an agent who is logged on. The supervisor may also intrude if an ACD agent asks him to do it. During intrusion no warning tone is heard.

Statistics — Facts about ACD-calls presented directly by the ACD-system, or on an advanced level by the CCS system.

Supervisor — An agent with a supervisor function for a number of agents. The supervisor may be equipped with a CCS system.

Timeouts — Limitation for how often the fixed clerical time may be expired before the agent is automatically logged out.

Trunk group — A group of trunks that are routed to an ACD-number.

Voice answer — Pre-recorded messages used as queue messages and greeting messages in trunk-, ACD group- and agent level.

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
SEA/EBBMP C. Bertsch	SEA/EBBX/E	105/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved	Kontr/Checked	Datum/Date / Rev	Tillhör/Referens-File/Reference
SEA/EBBMP		99-07-15 / G	ASB 150 02
		Database reference	
		105.fm	

ACD-GROUP

Contents **Page**

ACD-GROUP GENERAL 2

ACD-QUEUE ADMINISTRATION AND OVERFLOW CRITERIAS. 6

ACD-GROUP NIGHT SWITCHING 10

ACD-VOICE ANSWER 12

ACD-GROUP GENERAL

Definition

An ACD-group is a group of trunk lines used for distributing ACD calls to a group of agents.

Use

Calls on the incoming trunks are routed to an ACD-group with queue function. A number of agents can be logged onto the ACD-group to answer the queued calls. Every agent can be a member of all ACD-groups at the same time if required.

The ACD-groups are also equipped with the night service function. When this feature is activated, the incoming ACD-calls will be rerouted to a programmed night answer position. This is used for distributing calls after office hours.

Operation

None.

Capacity

Maximum 8 groups
Maximum 40 agents

NOTE: The number of ACD groups can be enhanced by programming follow me respective diversion from several extension positions (must not be physical available) towards one ACD group. So for example, one ACD group can be shared by maybe three different product suppliers, but with one advantage, that it takes approximately three times longer because of the advanced tasks of the ACD agent. For closer information see in programming part the command 2057.

Limitation

How the ACD groups are reached from outside depends, if the public network provides DID for the trunk lines or not.
If DID is used the connected trunk lines are a common resource for all the extensions in the system. DID calls to non ACD-extensions will automatically decrease the resources for an ACD-group.
If the trunk lines are used without DID, the resource can directly be assigned to a specific ACD group and can not be used for any other purpose.

If an ACD-MS system (CCS) is connected to the ASB 150 02 then a measurement on ACD - trunk level can only be done by using trunk lines without DID.

Analogue + digital CAS trunk lines

see above.

ISDN Basic Access, Primary Rate Access

In case of incoming traffic it is not possible to assign B-channels of a PRA/BA to different ACD groups. In order to use dedicated trunk resources for each ACD group a complete link (PRA or BA) has to be used without DID subscription.

Programming

ADMINISTRATION OF ACD-GROUPS

An ACD-group consists of one or more agents who answer calls within the ACD-queue. Up to 8 groups can be programmed.

5407
Create ACD-group

(accessible only via RASC)

Every new ACD-group must be created and assigned a directory number. Each ACD-number can be assigned a name string that is displayed on internal calling telephones display. See TELEPHONE DIRECTORY (481/155 34-ASB 150 02 Uen).

5615
Alter ACD-group number

(accessible only via RASC)

Using this command an existing ACD-group can be assigned a new directory number.

5507
Delete ACD-group

(accessible only via RASC)

Using this command an existing ACD-group can be deleted.

NOTE: All the relevant data to the group is erased.

3801
Read group association of ACD-number

This command is used to read to which ACD-group a certain directory number belongs.

```
10 Jul 14:40   +15°
ACD GROUP NO          3801 xxxx        z
 backward  forward     c/i      return
```

xxxx Enter directory number of ACD-group

z Show to which ACD-group the number belongs to (0 - 7).

Assign the ACD-group a name string

To each ACD-number can be assigned a name string. The ACD-name string will be displayed on the display of the extensions when they internally call an ACD-number.

See document FACILITY DESCRIPTION (481/155 34-ASB 150 02 Uen) TELEPHONE DIRECTORY.

TRUNK PROGRAMMING

Each trunk that is included in (assigned to) the ACD-groups must be programmed with regards to line and register signalling.

See document FACILITY DESCRIPTION (486/155 34-ASB 150 02 Uen), TRUNK.

1010
Reroute on answering position blocked?

(accessible only via RASC)

This is a rerouting when all agents are marked passive. For each trunk included in an ACD-group the command shall be set so that rerouting takes place when all agents are marked passive. This command functions only if command 3824 is blank.

1101 - 1104
Program trunk answering/reroute position

To the trunks used in connection with the ACD-groups must be assigned the same answering position that corresponds to the ACD-groups.

NOTE: If DID is used, no dedicated trunks are allocated for ACD groups, because all the trunks are common for the extensions in the system

Command 1101 is used to state to which answering position the call shall be directed when the system is switched for day traffic.

```
10 Jul 14:40   +15°
ANSWERING POS DAY     1101 xxxx     zzzz
 backward  forward     c/i      return
```

xxxx Enter directory number of external line

zzzz Enter trunk answering position for day traffic

Repeat procedure for commands 1102 - 1104.

6501
Administration data internal

This command allows to program ACD-group names for the corresponding trunks.

If the ACD-group's name is wanted to be displayed on the agent's telephone display, this name must be

assigned also to the trunk(s) used in connection with this ACD-group.

```
10 Jul 14:40   +15°
ADM.DATA INTERNAL       6501              >
 backward  forward      c/i       return
```

> Press **Enter**

xxxx Enter directory number of trunk
Press **Enter**

Enter the name (or information) (1 - 20 characters)

See also document FACILITY DESCRIPTION (481/155 34-ASB 150 02 Uen), *TELEPHONE DIRECTORY.*

COMMON DATA FOR ACD-GROUPS

3819
Time for passive marking on no reply

This command states the time after which an unanswered call is returned to the queue and the agent is automatically marked "passive".

```
10 Jul 14:40   +15°
NO ANSWER TIME         3819 xxxx       zzz
 backward  forward      c/i       return
```

xxxx Enter directory number of ACD-group

zzz Enter required time (1 - 255 seconds).
Default data = 30

NOTE: Command 3819 can also be set from an external PC-based CCS-system.

3820
Clerical time

This command states the clerical time that starts in the moment a call is completed until the agent is ready again to receive another call. For more information see chapter “ACD Clerical time” in 106/155 34 ASB 150 02 Uen.

```
10 Jul 14:40   +15°
CLERICAL TIME          3820 xxxx       zzz
 backward  forward      c/i       return
```

xxxx Enter directory number of ACD-group

zzz Enter desired interval (0 - 255 seconds).
Default data = 14

NOTE: Command 3820 can also be set from an external PC-based CCS-system.

3821
ID-code required

There are two possibilities for an agent to log on to the ACD-group(s): with or without entering an ID-code.

If the agents of an ACD-group must enter ID-codes in order to be active in the corresponding ACD-group, then the command must be set to YES. For more information see chapter “ACD Agent Identity” in 106/155 34 ASB 150 02 Uen.

```
10 Jul 14:40   +15°
ID-CODE REQUIRED       3821 xxxx        z
 backward  forward      c/i       return
```

xxxx Enter call number of ACD-group

z Y (yes) = log on by entering ID-code
N (no)= log on without entering ID-code (default value).

NOTE: Command 3821 can also be set from an external PC-based CCS-system.

3822
Call code required?

There are two possibilities for an agent to complete a concluded call: with or without entering a call code.

NOTE: A call code is only required if a clerical key is programed

If the agents must enter a call code after concluding the call, then the command must be set to YES. For more information see chapter “ACD Call Codes” in 106/155 34 ASB 150 02 Uen.

```
10 Jul 14:40   +15°
CALLCODE REQUIRED ?   3822 xxxx        z
 backward  forward     c/i      return
```

xxxx Enter directory number of the ACD-group

z Y (yes)= call code must be entered.
N (no)= no call code needed (default value).

NOTE: Command 3822 can also be set from an external PC-based CCS-system.

3824
ACD reroute position

For each ACD-group it is possible to program an alternative ACD-reroute position.

To this ACD-reroute position are directed calls that can not be presented because there are no active agents, or the number of queued calls exceeds the permitted maximal queue length, or the expected waiting time for the new call is equal or longer than programmed waiting time limit.

If no directory number is programmed, the ACD-calls will be directed to the reroute position for the relevant trunk. See commands 1103, 1104 and 1010.

```
10 Jul 14:40   +15°
ACD REROUTE POS.      3824 xxxx     zzzz
 backward  forward     c/i      return
```

xxxx Enter directory number of ACD-group

zzzz Enter directory number of ACD rereoute position
Default data = none

3828
Enter multiple call codes during clerical state allowed?

This command is used to state if the use of multiple call codes is allowed or not.

```
10 Jul 14:40   +15°
MULTIPLE CALLCODE ? C 3828   xxxx       z
backward    forward    c/i         return
```

xxxx enter the ACD-group directory number

z z=Yes, the agent can enter more than one call code
z=No, only one call code can be entered (default value)

3829
Number of time-outs before log-out

This command is used to state whether or not the number of timeouts should be limited or not.

```
10 Jul 14:40   +15°
NUMBER OF TIMEOUTS  C3829 xxxx        zzz
backward    forward    c/i         return
```

xxxx enter the ACD-group directory number

zzz enter number of timeouts (value must be between 0 and 255)
zzz=0: no monitoring of timeouts

3830
End fixed clerical time by pressing the clerical-key before time-out?
(clerical time ended by key)

This command is used to state whether or not fixed clerical time can be terminated by pressing a programmed clerical key.

```
10 Jul 14:40   +15°
CLERTIME AND CLERKEYC 3830   xxxx      z
 backward  forward     c/i      return
```

xxxx Enter directory number of ACD-group
z Yes / No

The default value is No (fixed clerical time can not be terminated by pressing clerical key)

2057
Follow me/Diversion to ACD group number

The command defines whether follow me, direct diversion respective diversion on busy to an active ACD group is allowed - on default the command is deactivated, that means follow me, direct diversion respective diversion on busy is not allowed.

See following documents for closer information concerning the specific topic:

Diversion Direct
Doc.no.: 165/155 34-ASB 150 02 Uen.

Diversion on Busy
Doc.no.: 166/155 34-ASB 150 02 Uen.

Diversion on No Reply
Doc.no.: 167/155 34-ASB 150 02 Uen.

Follow me
Doc.no.: 202/155 34-ASB 150 02 Uen.

Equipment

None.

ACD-QUEUE ADMINISTRATION AND OVERFLOW CRITERIAS

Definition

Queue administration denotes the way incoming calls are handled by the various ACD-queues and it is based on the call priority and on 3 overflow criterias:

- Overflow log-off criteria
- Overflow length criteria
- Overflow waiting time criteria

Call priority and administration denote how calls are selected and distributed via available agents.

Use

Each call that arrives at the ACD-group will be queued, unless it can be presented immediately to a free agent.

When an agent goes free the longest waiting call will be presented to this agent provided that there is no agent with higher priority.

Priority at agent level

Each agent can have an arbitrary (optional) priority for the call queues that are to be answered. For example an agent who is experienced enough to deal with calls from several queues has these queues as priority 1, whereas the other agents have the queue as priority 0.

In this manner, if all agents dealing with one queue are busy, the calls will immediately be directed to the agent(s) who has/have priority 1.

Overflow log-off criteria

This is the overflow criteria that takes in consideration the log-status of the agents. If all the agents are logged off, a new call is routed to the reroute position of the corresponding ACD-group.

Overflow length criteria

If the queue is at its maximum length the new incoming call will be rerouted to an ACD-reroute position that is individual for each ACD-group. This reroute position can be another ACD-group, an external abbreviated number, a common mailbox, an external voice mail system such as Voice 4000, or a telephone answering machine that can provide a message (stating that the queue is at maximum length and requesting the caller to leave her/his telephone number to be called later).

Overflow waiting time criteria

This is an overflow criteria in reference to the expected waiting time in queue.

For each new call coming into an ACD-group the expected waiting time will be automatically calculated as follows:

$$\frac{\text{Average speech time} \times \text{Actual position in queue}}{\text{Active agents in that group}}$$

If the result is equal or longer than the programmed waiting time limit (overflow criteria), the new call will be routed to the reroute position of the corresponding ACD-group .
If the ACD-reroute position is another ACD-group, the call will enter the corresponding queue and the expected waiting time in this queue will be checked. If in this queue another overflow waiting time criteria is matched, the call will not be routed any more; instead busy tone will be sent to it.

Blocking tone will be sent to the caller when the ACD-reroute position is a night switched ACD-group or there are no active agents for the considered ACD-group.

Dynamic ACD-queue length

It is possible to program the system for dynamic queue length.

This means that the programmed maximum queue length (see 1 below) varies with regard to the number of active agents. The purpose of dynamic queue length is that it shall be possible to maintain the desired “grade of service” irrespective of the number of active agents.

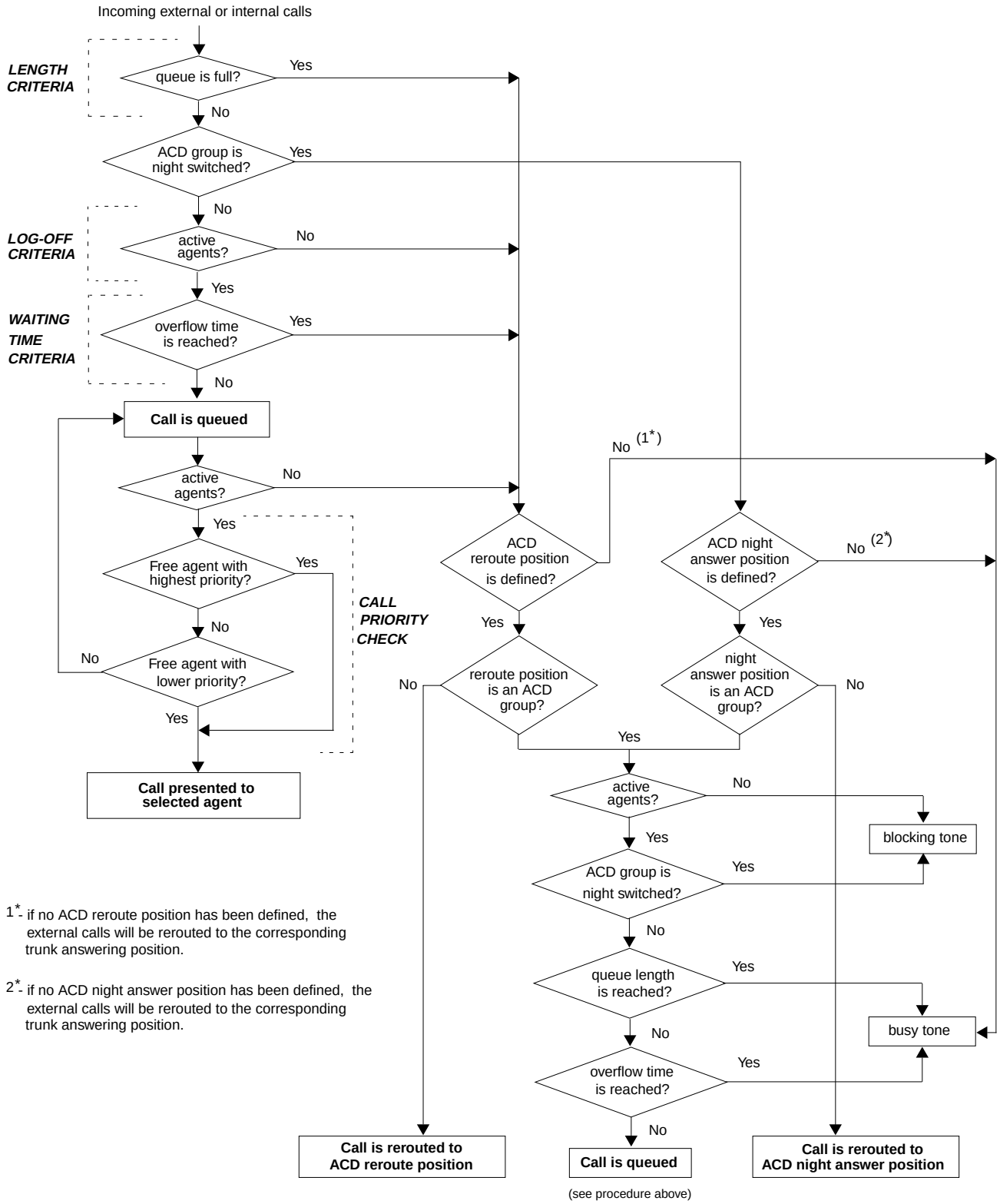
If the maximum queue length is reached, the busy tone will be sent to the caller.

The dynamic queue length is calculated as follows:

1) $$\frac{\text{Programmed queue length} \times \text{Number of active agents}}{\text{Number of programmed agents}}$$

The calculated dynamic queue length must never be less than 1 (one). If the calculated queue length is theoretically less than 1, the system sets this value to 1.

Principle of queue administration



1* - if no ACD reroute position has been defined, the external calls will be rerouted to the corresponding trunk answering position.

2* - if no ACD night answer position has been defined, the external calls will be rerouted to the corresponding trunk answering position.

Capacity / Limitations

A caller being in an ACD queue hears his individual queue position / calculated waiting time. The maximum queue position / calculated waiting time the caller will hear does not exceed position 23 / 23 minutes, even the individual queue position / waiting time is more than 23.

This is because the voice prompts of the ACD queue position are the same as used for the 24-hour voice prompts.

Programming

3817
Dynamic queue length

It is possible to define whether or not the permitted queue length will alter dynamically in correspondence to the number of the active agents.

```
10 Jul 14:40   +15°
DYNAMIC QUEUE          3817 xxxx        z
 backward  forward     c/i      return
```

xxxx Enter directory number of ACD-group

z Enter required function:
Y = Dynamic queue length
N = Fixed queue length (default data)

NOTE: Command 3817 can also be set from an external PC-based CCS system.

3816
Maximum queue length

When the maximum queue length has been reached, new calls will be directed to the ACD-reroute position of the corresponding ACD-group. See command 3824.

```
10 Jul 14:40   +15°
QUEUE LENGTH           3816 xxxx        zz
 backward  forward     c/i      return
```

Enter directory number of ACD-group

zz Enter required maximum length (1 - 63).
Default data = 25

NOTE: Command 3816 can also be set from an external PC-based CCS system.

3825
Overflow time

This command will be used to define the programmed waiting time limit (overflow time).

```
10 Jul 14:40   +15°
OVERFLOW TIME        3825   xxxx    yy
backward  forward     c/i      return
```

xxxx Enter the directory number of ACD-group

yy Enter the overflow time.
It must be set between 1 and 23 minutes. See document ACD-GROUPS (105/155 34-ASB 150 02 Uen) ACD-VOICE ANSWER.
The value 0 means that the criteria is not active.

NOTE:This command can be set from an external PC-based CCS system too.

3824
ACD reroute position

(See under ACD-GROUP GENERAL in this documentl)

ACD-GROUP NIGHT SWITCHING

Definition

The ACD-groups are also equipped with the night service function. When this feature is activated, the incoming calls (for the ACD-group that is night switched) will be rerouted to a programmed night answer position.

Use

Night switching of ACD-groups is a efficasious way for handling the ACD calls after office hours.

Operation

See under “ACD night switching” in ACD-AGENT (106/ 155 34-ASB 150 02 Uen).

Limitations

None.

Programming

0101
Assign facility category

For night-switching an ACD-group from an extension, it is needed that this extension has the right Authority category (COS) for doing it.

This command is used to assign to an extension the right Authority category (COS) for accessing certain facilities.

```
10 Jul 14:40   +15°
FACILITY COS      0101      xxxx       zz
 backward    forward      c/i      return
```

xxxx	enter extension’s directory number
zz	enter relevant facility category

If the agent wants to dedicate a particular key for night service(s) he can program a free name selection key (see under “Name Selection” in Facility Description).

3827
answer position night for ACD-group

This command defines the ACD answer position during the night mode for the corresponding ACD-group.

```
10 Jul 14:40   +15°
ANSWERING POS NIGHT   3827   xxxx    zzzz
 backward    forward      c/i      return
```

xxxx	Enter the ACD-group’s directory number
zzzz	Enter the ACD night answering position’s directory number for the above selected ACD-group. It can be: • extension number • operator queue • Automated Attendant • an other ACD-group • a fictive number • a common abbreviated number • PBX hunting group. • Common mailbox

Authorisation for night switching of the ACD-groups

Authorisation to night-switch all ACD-groups or individual ACD-groups is determined by the extension’s facility category (COS). In this respect the following commands are affected:

3083
Day/night switching of ACD group 0

Via this command it is possible to define which Authorisation categories (COS) are permitted to night-switch the ACD-group 0 via procedure *890 (dialled on telephone key pad).

```
10 Jul 14:40   +15°
DAY/NIGHT ACD.GRP0.?   3083     yy     zz
 backward    forward      c/i      return
```

yy ACOS value

yy = 0 - 15

z indicates whether or not the extension with the specified ACOS is allowed to day/night switch the ACD-group 0.
z = YES, permission to day/night switch ACD-group 0.
z = NO, no permission to day/night switch ACD-group 0. The default value of this command is No (N).

3084 - 3090
Day/night switching of ACD-groups 1-7

The same as 3083 but for the ACD-groups 1-7 respectively via procedures *891 - *897 (dialled on telephone key pad). The programming procedure is the same as in the command 3083. The default value of this command is No (N).

3091
Day/night switching of all ACD groups

This command is used to define which Authorisation categories (COS) are permitted to night-switch all ACD-groups simultaneously via procedure *898 (dialled on telephone key pad). The programming procedure is the same as in the command 3083. The default value of this command is No (N).

Equipment

None.

ACD-VOICE ANSWER

Definition

Voice message before answering is a recorded information (on trunk level) supplied to the external caller. See FACILITY DESCRIPTION (523/155 34-ASB 150 02 Uen) VOICE MESSAGE BEFORE ANSWERING.

Voice answer denotes a recorded voice message (on ACD-group level) supplied to a caller, if the call cannot be presented to a free agent directly.

Additionally an individual greeting (on agent level) can be supplied to a caller just before the agent is connected to the call.

The concept of voice answer also embraces the possibility, when the agent answers a presented call, to play a prerecorded greetings message.

Use

Voice message to callers in queue

By connecting a voice memory board (VMU-D, VMU-HD or MFU), the caller can receive a voice message when routed in a queue.

Voice messages can be supplied in different combinations:

- Only the first voice message with or without waiting time or queue position
- First and second voice messages with or without waiting time or queue position

Waiting time means that the system calculates a probable waiting time on the basis of the latest eight presented calls.

Queue position means that the system informs the caller of how many calls are ahead of her/him in the queue.

Calls that remain unanswered within a programmable time, are connected to a new voice message which states that the call is still in the queue. This message is repeated until the call is presented to a free agent.

Music or information can be supplied between every voice message.

Voice message per ACD-group on agent answer

When an agent answers a presented call, a third voice message can be supplied and it is common for an ACD-group.

Individual greeting per agent

To the call routed to an agent's extension it is possible to send the individual greeting of that agent just before he is connected to the call.
It is also possible to program individual greeting per agent and automatic answer.

Queue tone

As an alternative to voice message, the caller can be supplied with a special queue tone, when the call is queued.

Operation

None.

Capacity

The feature "Individual greeting per agent" is possible only with VMU-HD or MFU board because of the 255 voice references that need to be recorded.

Limitations

All voice messages need to be recorded on one VMU-D /-HD or MFU board.

Programming

For programming the “common voice message” that will be played to the external caller, see FACILITY DESCRIPTION (523/155 34-ASB 150 02 Uen) VOICE MESSAGE BEFORE ANSWERING.

Each ACD-group can be programmed for individual queue administration.

The table below shows all queue alternatives and the commands to be used.

QUEUE FUNC-TION	COMMANDS			
	3802	3803	3901	3902
No voice message	zzz=0	----	----	----
Voice mess. 1 without queue pos. or waiting time	zzz= 1 -255	zzz=0	Y=0	----
Voice mess.1 with queue pos. or waiting time	zzz= 1-255	zzz=0	Y=0 Y=1	----
Voice mess. 1 and 2 without queue pos. or waiting times	zzz= 1-255	zzz= 1-255	Y=0	Y=0
Voice mess. 2 with waiting time or queue pos.	zzz= 1-255	zzz= 1-255	Y=0	Y=0 Y=1
Voice mess. 2 without waiting time or queue pos.	----	zzz= 1-255	----	Y=0
Voice mess. 1 and 2 with waiting times or queue pos.	zzz= 1-255	zzz= 1-255	Y=0 Y=1	Y=0 Y=1

zzz Time in seconds before and between the voice messages

Y=0 First voice reference in voice message shall be programmed

Y=1 Second voice reference in voice message shall be programmed

--- Does not need to be programmed.

3802
Time before call is answered automatically

State the time from first ring signal until the call is answered automatically with voice message 1. If the time is set at 0, the caller will receive ring control tone until an agent is free.

```
10 Jul 14:40   +15°
QUEUE ANNO 1 TIME     3802 xxxx      zzz
 backward  forward     c/i      return
```

xxxx Enter call number of ACD-group

zzz Enter required waiting time (0 - 255 seconds). Default data = 0

NOTE: Command 3802 can also be set from an external PC-based CCS system.

3803
Time between voice answers

States the time after a call has been answered automatically until voice message 2 is supplied. In the interim, the caller can be provided with music. If the time is to set 0, silence or music continues until an agent is free.

```
10 Jul 14:40   +15°
QUEUE ANNO 2 TIME     3803 xxxx      zzz
 backward  forward     c/i      return
```

xxxx Enter call number of ACD-group

zzz Enter required time (0 - 255 seconds)
Default data = 0

To obtain music between the voice messages see document FACILITY DESCRIPTION (343/155 34-ASB 150 02 Uen) MUSIC ON HOLD.

NOTE: Command 3803 can also be set from an external PC-based CCS system.

Voice messages for ACD-queue

Those voice messages that are to be supplied to callers need to be recorded and then associated to voice messages for ACD.

Each voice message can consist of two separate voice messages. The time programmed in the command 3803 is inserted automatically between the voice messages.

3901
Coupling of voice reference to voice message 1

This command is used to state which recorded free voice message shall be utilised as voice message 1.

```
10 Jul 14:40   +15°
QUEUE ANNO 1 REF     3901 xxxx  y  uuvv
 backward  forward     c/i      return
```

xxxx Enter call number of ACD-group

y Enter voice reference's sequence number 0 - 1

uuvv Enter recorded voice reference
uu = 1
vv = 1 - 32
Default data = 0000 = No voice message

3902
Voice message 2

States which voice message(s) shall be used as voice message 2.

3903
Voice message 3

If, on agent answer, a voice message is to be supplied, this needs to be programmed. In the command is stated which voice message shall be used.

```
10 Jul 14:40   +15°
QUEUE ANSWER REF 3    3903 xxxx  y  uuvv
 backward  forward     c/i      return
```

xxxx Enter call number of ACD-group

y Enter voice message's sequence number 0 - 1

uuvv Enter recorded voice message + sequence number
uu = 1
vv = 1 - 32

4401
Recording of voice message

For recording of voice message see document FACILITY DESCRIPTION (522/155 34-ASB 150 02 Uen) VOICE MESSAGES.

To obtain waiting time or queue position, the time of day 0 - 23 shall be recorded. See command 4405.

Each voice message shall comprise two recorded voice references with time statement or queue position in between.

Examples of voice messages as queue information:

Example 1: Voice message without time or queue indication.

Voice reference 0 = *"The Travel agency. You are in queue now. Please wait".*

Example 2: Voice message with calculated waiting time

Voice reference 0 = *"The Travel agency. You are in queue now. The estimated waiting time is about 3 minutes".*
(Minute number = *3)*
(Voice reference 1 = *minutes)*

Example 3: Voice message with position in queue

Voice reference 0 = *"Travel agency. You are in queue now and there are 3 calls before you".*
(Waiting calls = *3)*
(Voice reference 1 = *calls before you)*

Example of voice answer when selected agent answers

Voice reference 0 = *"Italy Holidays. Can I help you?"*

3823
The agent shall have monitoring for voice messages

It is possible to choose whether the agent shall be able/not able to listen to the voice message that is supplied on answer.

```
10 Jul 14:40   +15°
MONITOR ANSW ANNO ?   4301 xxxx        z
 backward  forward     c/i      return
```

xxxx Enter directory number of ACD-group

z Enter Y = monitoring
Default data = N

3704
Queue tone to caller

If voice messages are not employed, the caller can, instead, be supplied with queue tone when the call is queued.

```
10 Jul 14:40   +15°
QUEUE TONE ?          3704             z
 backward  forward     c/i      return
```

z

Enter required function
Y = Queue tone is sent
N = Queue tone is not sent (default data)

3818
Waiting time or queue position

One can choose whether the voice message shall state the calculated waiting time or current position in queue.

```
10 Jul 14:40   +15°
QUEUEINFO = POS ?     3818 xxxx          z
 backward  forward     c/i      return
```

xxxx Enter directory number of ACD-group

z State function:
Y = Voice answer states queue position
N = Voice answer states calculated waiting time (default data)

NOTE: Command 3818 can also be set from an external PC-based CCS system.

3826
Individual greeting per agent for an ACD-group

See under "ACD-agent individual greeting" in ACD-AGENT (106/155 34-ASB 150 02 Uen).

4425
Record individual greeting per ACD-agent

See under "ACD-agent individual greeting" in ACD-AGENT (106/155 34-ASB 150 02 Uen).

Equipment

Voice message requires that at least one VMU-D /-HD or a MFU board exists installed in the PBX.

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SEA/EBBMP C. Bertsch	SEA/EBBX/E	106/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved / Kontr/Checked		Datum/Date / Rev	Tillhör/Referens-File/Reference
SEA/EBBMP		99-07-15 / F	ASB 150 02
		Database reference	
		106.fm	

ACD-AGENT

Contents **Page**

ACD-AGENT GENERAL 2

ACTIVE/PASSIVE MARKING OF AGENT TELEPHONE. 5

ACD-AGENT IDENTITY (PIN) 7

ACD-AGENT INDIVIDUAL GREETING 8

ACD-AGENT LOGON PROCEDURE. 10

ACD-CALL PRIORITY 14

ANSWERING INCOMING ACD-CALLS. 15

ACD-CLERICAL TIME 17

ACD-PAUSE 20

ACD-HELP 22

ACD-CALL CODES 24

ACD-NIGHT SWITCHING 29

ACD-AGENT GENERAL

Definition

An agent position is an answer position equipped with an ECONOMYplus -, STANDARD - or EXECUTIVE Telephone programmed with ACD functions.

Use

Each agent shall have a programmed answer key for each ACD-group he/she is to serve.

If there are several idle agents in an ACD-group, and a new one logs on, this agent can be the first one or the last one (this is programmable) to receive a new ACD-call.

NOTE: This also applies for agents who have programmed immediate speech connection.

Special ACD-layout

In addition to the business layouts (existing and modified ones) of the ECONOMYplus and STANDARD Telephone, the system offers also the ACD-layout for these telephones. This offers the opportunity to have an ACD-configuration on the fixed keys of these telephones. The selection between:

- business layout
- ACD-layout with clerical key
- ACD-layout without clerical key

for a certain telephone is command-based.

The new layout is not available on an EXECUTIVE telephone because this telephone has enough free programmable keys.

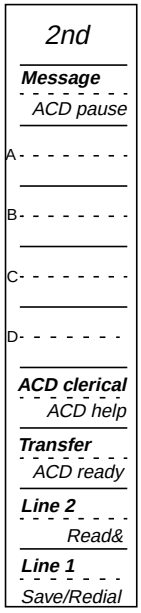
Although the ACD-pause, ACD-help and ACD-ready keys are on the second layer, the LED indication depends on the activation of these functions.

See also PROGRAMMABLE AND FIXED KEYS (404/155 34-ASB 150 02 Uen).

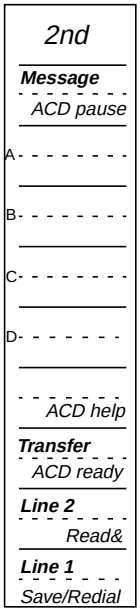
The two below-mentioned ACD-layouts have the following configuration:

ACD-layout

with clerical key



without clerical key



NOTE: Only the "ACD-layout with clerical key" will exist as a **printed** version of the ACD-layout. If the "ACD-layout without clerical key" has been selected, the ACD-clerical key will not be active although it is written on the layout label.

Use the DCM Tool (FAS BS 203 10) for printing correct or customised ACD layout labels.

System Resources

It is possible to configure the system that it reserves system resources (e.g. PCM-channels, buffers and timers) for each ACD-agent at the time he/she logs on into the ACD-system. These reserved resources will be assigned to the specific ACD-agent as long as he/she is logged into the ACD-system.

After the Agent have logged off (passive state) all resources are free for other tasks in the system.

For detailed information see command Non blocked ACD" under Programming.

Operation

Queue administration

If agents are free, an incoming call to an ACD-number will be presented to the agent who has been free the longest time.

If all agents are busy, the call will be placed in the queue of the relevant ACD-group.

Recorded greetings message

The ACD-group can be programmed so that a recorded greeting message and agent's individual greeting are played when the agent presses the answer key. The agent hears the messages (if the command 3823 is set to YES) and thus can start speaking immediately as the message ends.

See also under "ACD-voice answer" in ACD-GROUP (105/155 34-ASB 150 02 Uen).

Capacity

Total number of agent positions	40
Number of queues	8
Number of PINs	1000
Call codes used by an agent	100.000

Limitation

Using ECONOMYplus as an agent's telephone presents the difficulty that the agent cannot see any instructions on the display (ECONOMYplus does not have a display).

Programming

0168
ACD key layout

The command defines whether or not the ACD key layout will be used on an ECONOMYplus or STANDARD telephone; and, if yes, which one.

```
10 Jul 14:40   +15°
USE ACD KEY LAYOUT ? C 0168 xxxx        z
 backward    forward      c/i      return
```

xxxx — Enter the directory number of the extension

z — defines which layout will be used

z=1 (no) use business layout

z=2 (yes) ACD-layout with clerical key

z=3 (yes) ACD-layout without clerical key

Default value is z=1.

0301
Selection of answer key

Each ACD-group that is to be served by an agent shall be represented by a key on the agent telephone.

NOTE: Operator positions cannot be used as agent positions.

```
10 Jul 14:40   +15°
FUNCTION OF KEY    C 0301 xxxx  yy     zz
 backward    forward      c/i      return
```

xxxx — Enter agent's directory number

yy — Enter relevant key (00 - 48)

zz — Enter function = 16
Step to command 0302

0302
State group association

Here it is stated for which ACD-group the key is programmed.

```
10 Jul 14:40   +15°
ASSOCIATED NUMBER   0302   xxxx   yy    z
 backward    forward      c/i      return
```

z Enter ACD-group number (0 - 7)
Step to command 0303

0303
State ring alternative

Here it is stated with which ringing alternative the ACD-calls are to be presented.

```
10 Jul 14:40   +15°
RINGING ALTERNATIVE   0303 xxxx yy     z
 backward  forward     c/i      return
```

z Enter required ringing alternative (0 - 5)
For immediate answer state (5)

2086
Non blocked ACD

The command defines whether or not the system reserves specific system resources for each ACD-agent from logging on into the system until logging off from the system.

No Each time an ACD-agent receives an incoming call system resources must be fetched. This may take a while.

YES The ACD-agent reserves own resources at the time of logging on into the system and holds them as long as he/she is active (logged into the system).

This command is only accessible via RASC.

Equipment

The ECONOMYplus, STANDARD and EXECUTIVE can be used as agent telephones.

ACTIVE/PASSIVE MARKING OF AGENT TELEPHONE

Definition

The agent can determine her/himself, by means of a key, whether not ACD-calls shall be presented or not on his/her telephone set.

Use

A presented call that remains unanswered after a certain programmable time will be returned to its place in the queue and the agent's telephone will be marked as passive automatically by the system.

Operation

Each agent is assigned a key for active/passive marking (logged in/logged out of the system).

The key has a dual function and when the telephone is marked active, the associated lamp glows steadily.

When the agent is marked active, calls to ACD-groups that are active will be presented.

An agent telephone with display shows:

EXECUTIVE telephone

```
10 Jul 14:40   +15° 0=01 1=02 2=00 3=00
EUROTRAVEL                701 SPEECH
```

STANDARD telephone

```
0=01 1=02 2=00 3=00
EUROTRAVEL   701  S
```

The right part of the top row shows the situation of all ACD-groups programmed in the system. If more than four queues have been programmed, the display shows four queues at a time.The queue indicator is updated every five seconds.

The STANDARD telephone cannot be marked active unless a queue is active.

The EXECUTIVE telephone can be marked active even if no ACD-groups are marked active. This allows the supervisor to monitor queue information without participating in traffic handling.

The display then shows the following warning text:

```
10 Jul 14:40   +15° 0=01 1=02 2=00 3=00
NO ACTIVE QUEUES
```

When the agent is marked passive, no ACD-calls will be presented to the telephone. The telephone functions as a normal extension in the system.

Active/Passive marking of the telephone can only be effected between calls.

Capacity

Not applicable.

Limitation

None.

Programming

0301
Key programming on agents' telephones.

All telephone key functions are programmed via command 0301

```
10 Jul 14:40   +15°
FUNCTION OF KEY       0301 xxxx yy    zz
 backward  forward     c/i      return
```

Programming of ACD-Ready key

Each agent must have an ACD-Ready key for active/passive marking:

zz Enter function code = 29

Equipment

The ECONOMYplus, STANDARD and EXECUTIVE telephones can be used as agent telephones.

ACD-AGENT IDENTITY (PIN)

Definition

Personal Identity Number (PIN) is used by the agent to log-on to the ACD-system. A PIN is only useful if the system has a connected PC-based ACD Management System (such as CCS or ACD-MIS).

Use

If the ACD-system has a connected ACD Management System (ACD-MS), the agent's identity PIN (Personal Identity Number), is to be used. Each agent who works with the system can be assigned a PIN that is used when the agent tries to log onto the ACD-system.

The PIN can consist of an arbitrary number between 0 - 999.

It is programmable per ACD-group whether or not a pin is required.

By means of the PIN an individual agent can work at any agent position. Several agents can use the same telephone at different times of the day.

In any case the statistics will be associated with the individual agent and not the agent position.

The entered PIN is verified by ACD-MS and log-on is not possible, if an incorrect code is entered.

Operation

See under "Log-on procedures" in ACD-AGENT (106/155 34-ASB 150 02 Uen).

Capacity

Up to 1000 PINs can be used (0 - 999).

Limitation

None.

Programming

3821
PIN required?

This command is used to state whether or not the ACD-agent has to state her/his PIN (Personal Identity Number) on being marked active. The PIN is used to facilitate identification of the ACD-agent for advanced traffic statistics using a PC-based ACD-MS.

```
10 Jul 14:40   +15°
PIN REQUIRED?        3821     xxxx     z
backward     forward     c/i      return
```

xxxx	enter the directory number of the ACD group (already existing).
z	state if an ACD-agent has to enter her/his PIN when the agent marks himself ready. z=Yes, PIN is required z=No, PIN is not required (default value).

Equipment

None.

ACD-AGENT INDIVIDUAL GREETING

Definition

The individual greeting of an agent is the voice announcement sent to the incoming ACD-call just before this agent is connected to the call.

Use

The agent number is used for the feature “Individual greeting per agent” to distinguish between the different agents.

For recording the individual greetings 255 (1- 255) voice announcement references are reserved (see command 4425 "Programming").

Thus, the agent number is equivalent to the individual greeting announcement reference number.

If agent number 0 is entered, no individual greeting is announced, even if individual greeting for the corresponding ACD group has been programmed.

Operation

See under "Log-on procedures" in ACD-AGENT (106/155 34-ASB 150 02 Uen).

Capacity

It is possible to use up to 255 individual greetings ACD-agent’s.

Limitation

The "Individual greeting per agent" works only with VMU-HD or MFU board.

Programming

3826
Individual greeting per agent for an ACD-group

Via this command it is possible to define whether or not the individual agent’s greeting will be sent to the ACD-callers. This command can be programmed via RASC, PC-based ACD-MS applications and telephone sets.

The display shows:

```
10 Jul 14:40   +15°
INDIV. GREETING?     3826   xxxx     z
 backward  forward     c/i      return
```

xxxx — Enter the directory number of the ACD group whose agents will send individual greeting to the ACD-callers

z — Y (yes) = individual greeting per agent is allowed,

N (no) = individual greeting is not allowed (NO is the default value).

NOTE: *If the commands 3903 and 3826 are both set to YES, both corresponding voice announcements must be recorded. If just individual greeting is recorded, the caller will not hear it because the voice message per ACD-group on agent answer is not recorded.*

4425
Record individual greeting per ACD-agent

(accessible only via telephone set)

Via this command you can record / play / erase individual agent’s greeting voice announcements.

The display shows:

```
10 Jul 14:40   +15°
ACD ANNO   1-255        4425             >
backward         forward          returns
```

Press ENTER

```
10 Jul 14:40   +15°
ACD ANNO NO:                    xxx
                               return
```

xxx — enter the reference number of the individual greeting announcement for the agent that has to use the same number as agent number during log-on procedure.

return — moves one step backward

Press ENTER after entering the reference number.

```
10 Jul 14:40   +15°
ACD ANNO    1-255                xxx
rec      play-back       erase     return
```

Now you can start recording the selected voice announcement, or you can play-back or erase an existing voice announcement.

Equipment

The VMU-HD or MFU board is mandatory for using the feature "Individual greeting per agent".

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		99-07-15	F

ACD-AGENT LOGON PROCEDURE

Definition

The log-on procedure is the set of actions needed to be carried out by the agent in order to log-on to the system.

Use

The agent can use the features offered by the ACD-system only when logged on to the system. The caller who has been waiting in the queue the longest time will be connected to the agent automatically.

Operation

An agent can log on to the system by means of the telephone set or by means of computer (CTI or PES).

There are different log-on procedures in respect to the following conditions:

1 PIN code is required / not required

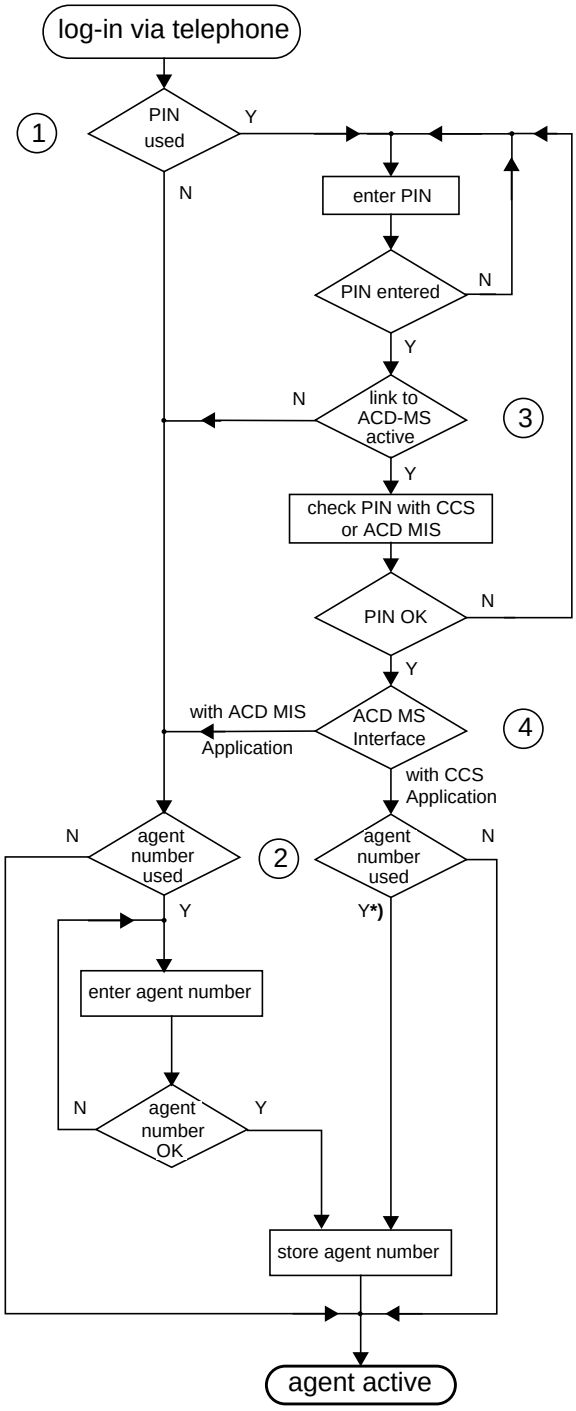
2 individual agent's greeting is programmed / not programmed (agent number required or not)

3 PC based ACD-MS application is running / not running

4 used ACD-MS application:
ACD-MIS application or Call Centre Supervisor (CCS)

The following flow chart gives detailed information on how the ACD-system works during the logon procedure.

The conditions described above are marked with the same numbers as in the flow chart.



***)** . . . if PIN is used and ACD-MS interface with CCS system is running, the agent number is given by the CCS system, because the CCS system knows the relation between PIN and agent number.

Depending on the programming of the system it is possible to log on to the ACD-system in several ways.

The description below shows the log-on procedure proceeding on the assumption that the system is programmed as follows:

Condition: System is programmed to ask for the PIN,

System is programmed to send individual greeting (agent number is required)

PC-based CCS application is **not** running

Press the desired ACD-group keys to take calls from these ACD-groups (lamp associated with the ACD-group key has to be on)

Press ACD-ready key; the corresponding lamp flashes slowly as an indication that the log-on procedure has started and the display shows:

EXECUTIVE telephone

```
10 Jul 14:40   +15°
ENTER PIN:     _
```

STANDARD telephone

```
ENTER PIN:     _
```

- Dial the code (1-3 digits) on the key pad
- Press # **(enter)**

Only the syntax of the entered PIN is checked but not whether the PIN is available in an optional ACD-MS application's database.

After entering a correct PIN the agent will be asked to enter the Agent Number and the display shows:

EXECUTIVE telephone

```
10 Jul 14:40   +15°
ENTER AGENT No:     _
```

STANDARD telephone

```
ENTER AGENT NO:     _
```

The available agent numbers are 0-255.

NOTE: It is possible to log-on with the agent number 0, but in this case no individual greeting will be available for the agents with the agent number=0 even if individual greeting is programmed for the ACD group of which the agent is a member.

An error tone will be heard and the display shows:

```
10 Jul 14:40   +15° 0=01 1=02 2=00 3=00
NO IND.GREETING
```

Nevertheless the log-on is successful.

When a valid PIN and Agent Number are entered, ACD-ready lamp glows steadily as an indication that the agent is logged on. All incoming calls will receive ACD answer announcements (individual greeting) of the agent that answers the call. If the "Monitor answer anno." is set to YES (command 3823), the agent will be able to listen to both announcements when pressing the answer key.

Exceptions:

- System is programmed **not** to ask for the PIN

If the system is programmed not to ask for a PIN, the log-on procedure described under 'Condition' is the same, but without PIN entering procedure. The system asks first for the agent number.

- System is programmed **not** to ask for the agent number

If the system is programmed not to ask for an Agent number, the log-on procedure described under 'Condition' is the same but without the agent number part. In this case no individual greeting is announced to the caller.

- PC-based CCS application is running

Press the desired ACD-group keys to take calls from these ACD-groups (lamp associated with the ACD-group key has to be on)

Press ACD-ready key; the corresponding lamp flashes slowly as an indication that the log-on procedure has started and the display shows:

EXECUTIVE telephone

```
10 Jul 14:40   +15°
ENTER PIN:     _
```

STANDARD telephone

```
ENTER PIN:     _
```

- Dial the code (1-3 digits) on the key pad
- Press # **(enter)**

The CCS has a list which distinguishes the relation between PIN and Agent Number. Therefore it is not necessary to enter the Agent Number after the right PIN is entered. Instead, the Agent Number will be selected automatically by the CCS.

When a valid PIN is entered, the agent will be logged on and all further incoming calls will receive after ACD answer announcements the individual greeting of the agent that answers the call. If the “Monitor answer anno.” is set to YES (command 3823), the agent will be able to listen to both announcements when pressing the answer-key.

Error cases:

wrong PIN (in combination with ACD-MS application)

After entering the PIN, a check in the ACD-MS application will be carried out to determine whether or not this PIN exists, is actual not used by an other agent and fits to the agent position. If not, the agent will receive the corresponding warning message and an error tone.

The display shows:

EXECUTIVE telephone

```
10 Jul 14:40   +15°
INVALID PIN     _
```

STANDARD telephone

```
INVALID PIN     _
```

After 2 seconds the agent will be returned to the prompt that requests the agent to enter the PIN again.

wrong PIN (no ACD-MS application is running)

If the syntax of the entered PIN is not correct, an error tone will be sent to the agent and the display of his telephone shows:

EXECUTIVE telephone

```
10 Jul 14:40   +15°
INVALID PIN     _
```

STANDARD telephone

```
INVALID PIN     _
```

After 2 seconds the agent will be returned to the prompt that requests the agent to enter the PIN again.

wrong Agent Number

When the agent number is entered, the ASB 15002 checks whether or not this agent number is correct.

If the agent number is not correct, an error tone will be sent to the agent and the display of the telephone shows:

EXECUTIVE telephone

```
10 Jul 14:40   +15°
INVALID AGENT NUMBER     _
```

STANDARD telephone

```
INVALID AGENT NUMBER
```

After 2 seconds the agent will be returned to the prompts that request her/him to enter the agent number again.

NOTE: Logging on via ECONOMYplus presents the difficulty that the agent cannot see the log-on instructions (ECONOMYplus has no display).

Capacity

Not applicable.

Limitation

A PIN code is only useful if an ACD-MS application is connected and running.

Programming

None.

Equipment

The ECONOMYplus, STANDARD and EXECUTIVE can be used for logging on to the system.

ACD-CALL PRIORITY

Definition

If an agent answers several queues, a priority between the queues may be programmed.

Use

Each agent can answer calls to several queues (maximum 8). Each queue can be assigned a priority that is individual to the agent.
For example, a company maintains two ACD groups, one for technical support and one for purchase. When agents are more experienced in technical matters but not really familiar with economic matters, then a high priority (highest priority = 0) should be assigned to the ACD Group-keys for technical support and a low priority for the ACD Group-keys for purchase on their telephone sets.
In this case a second group of agents should be available with conversely programmed priorities. Otherwise, calls waiting in the purchase queue have to wait until the queue for technical support is empty, even if calls into the technical support queue arrive later than the purchase call has arrived in the other queue.

The technical support group will be connected mainly to calls from the technical support queue. Only if in this queue no callers are waiting the technical support group will receive calls from the other group (purchase) if there are queued calls.

Operation

For each ACD-group answer key the order of priority for answering the calls must be defined.

If all agents who have programmed the highest priority to an ACD group are busy, it will be checked if any agent has programmed lower priority to this ACD group and is free. If so, the call will be presented to this agent.

As soon as calls exist in the queue to which the agent has assigned highest priority, no calls will be presented from other queues to which this agent has assigned lower priority.

As soon as an agent goes free, the call that has been queued longest time will be presented to the agent's telephone which has assigned highest priority to the queue related to this call.

Capacity

Not applicable.

Limitation

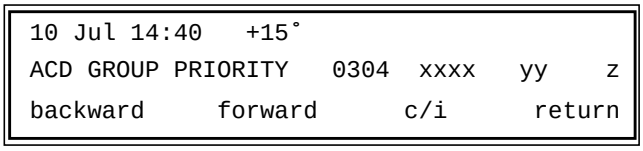
None.

Programming

0304
State answer priority for the group

Groups that are to be handled by the agent can be assigned a priority that is individual for a certain agent.

Individual priorities can be assigned to different ACD-groups. This means that if the agent is free a queued call will be presented from the queue with the highest priority. If no calls exist in this queue, the longest-queued call will be selected from the next queue in the order of priority.



xxxx	enter the agent's directory number
yy	enter the relevant key (00-48)
z	enter required priority 0 - 7 for the ACD-group The highest priority is 0.

Equipment

None.

ANSWERING INCOMING ACD-CALLS

Definition

None.

Use

The ACD-agent has two ways of answering an ACD-call depending on system programming. Either the agent can answer a call by pressing the ACD Group-key or each ACD Group-key can be programmed for immediate answer.

If the system is programmed for immediate answer, the agent receives a tone immediately before the call is presented, without pressing the ACD Group-key.

When immediate answer is used, and the call is presented directly on the agent telephone **Line 1**, and several queues are to be answered, it is advisable to use an EXECUTIVE or STANDARD telephone, to permit identification of the queue from which the call is originated on the display.

Operation

Active / Passive marking of Agents

The agent can decide by her/himself which of the programmed ACD-groups he/she wants to answer.

The agent's telephone is set in the passive mode by pressing the **ACD-ready**-key. The lamp extinguishes.

ACD-keys that were marked active are on and glow steadily.

The agent can now reprogram her/his ACD-answer keys. Each key has a toggle-function.

- Press those keys that are to be active so that the corresponding lamps glow steadily
- Then press **ACD-ready**
- The lamps of all programmed ACD-keys extinguish and the lamp for **ACD-ready** lights and glows steadily.

NOTE: *If some agents (of an ACD-group) are in idle state and another agent logs on to this ACD-group, then it is programmable whether the new agent will be the first or the last in receiving a new ACD-call (see command 3709 in this respect).*

Incoming calls

An incoming call is signalled on the lamp of an ACD-group answer key by flashing rapidly.

Line 1 or **Line 2** is reserved and its lamp glows steadily.

Answer

- The call is answered by pressing the corresponding key for the called ACD-group
- When the call has been answered, the ACD-lamp extinguishes whereas the lamp for the reserved **Line 1** or **Line 2** flashes to confirm connection.

Immediate answer

If the ACD-group answer key is programmed for immediate answer, the incoming call will be answered automatically and both called party and caller hear a short burst tone.

The call takes place via **Line 1**.

Termination of the call

An ongoing ACD-call is terminated by:

- Replacing the handset or
- pressing **Clear**

When an agent in this situation ends the ongoing call, and calls exist in any of the relevant queues, the next call will be presented after the preprogrammed clerical time expires.

Termination of the call with ACD-group key

An ongoing ACD-call can also be terminated by pressing any of the ACD-group keys.

By means of RASC it can be programmed whether or not this option will be available for all agents.

If the call is not an ACD-call, nothing will happen upon pressing any of the ACD Group keys.

Non-ACD calls will be terminated by pressing "Clear" or by replacing the handset.

Capacity

Not applicable.

Limitation

None.

Programming

3709
New agent on last position?

If there are more idle agents in an ACD-group and a new one logs on, this member can be the first one or the last one to receive a new ACD-call.

```
10 Jul 14:40   +15°
NEW AGENT = LAST          3709            x
 backward    forward      c/i      return
```

x — states whether a new agent, who logs on, will be placed on last or first position in free-agents list.

Yes = new agent is placed on last position in free-agents list.

No = new agent is placed on first position in free-agents list (default value is "No").

2083
Terminate ACD calls with ACD group keys

(accessible only via RASC)

By means of this command it is possible to define whether or not an ACD-call can be terminated also by pressing any of the ACD group keys. For activating this option the command must be set to YES. The default value is NO.

Equipment

For answering the incoming ACD-calls the ECONOMYplus, STANDARD and EXECUTIVE telephones can be used.

ACD-CLERICAL TIME

Definition

Clerical time is the state in which the agent terminates an ACD call until the next call can be presented to the agent. During this time the agent is blocked for new ACD calls. The agent may use this period for other purposes (e.g. making notes). Different sequences can be used to leave the clerical state. Clerical time can be fixed or flexible.
The clerical time can be displayed instead of the queue information on the telephone and can also be handled from CTI- or PES applications.

Use

Fixed clerical time without clerical key

It is possible to program for each ACD-group (for its agents) a fixed clerical time. This will be the same for all agents of this ACD-group and is the interval between completing a call and being ready to receive new ACD-calls again.

Fixed clerical time with clerical key

It is possible to program for each ACD-group (for its agents) a certain clerical time. This clerical time will be the same for all agents of this ACD-group. Moreover there can be assigned a clerical key for each ACD-Agent telephone. With this special programming it is possible to leave the clerical state already by pressing the clerical key before the clerical time elapses.

Flexible clerical time with clerical key

Each agent can be assigned a clerical key that is to be pressed when the agent is ready to accept a new call and wants to interrupt his clerical status.

This function can be quite useful if a common time is too short for certain agents.

Agents to whom no individual key is assigned are subject to the fixed clerical time.

Display clerical time

This function makes it possible to display the clerical time on agent telephones. During the clerical state the clerical time is displayed instead of the queue information.The clerical time can be shown in two ways:

a) remaining clerical time
The displayed time will start with programmed clerical time and will be count down.

b) elapsing clerical time
If no fixed clerical time is used, the displayed time will start with 5 seconds and will be count up.

The ‘clerical time display-picture’ is replaced with the queue information if the clerical state is left.

Operation

Termination of an ACD-call:

Fixed clerical time without clerical key

- Replacing the handset or pressing **Clear**
- The agent is now unavailable and not able to take new ACD-calls. After the programmed fixed clerical time the system automatically makes the Agent available for further ACD-calls.
  The remaining clerical time can be shown on the display (if programmed).

Fixed clerical time with clerical key

- Replacing the handset or pressing **Clear**
- The lamp associated with the clerical key is on and glows steadily.
  The remaining clerical time can be shown on the display (if programmed).
- There are now two ways to go active for new ACD-calls. The Agent can wait until the fixed clerical time has elapsed and the system makes the agent automatically available for new ACD calls or the ongoing clerical time can be terminated by pressing the clerical key

- The light extinguishes and any queued call is presented immediately

Flexible clerical time with clerical key

- Replacing the handset or pressing **Clear**
- The lamp associated with the clerical key is on and glows steadily.
  The elapsed clerical time can be shown on the display (if programmed).
- The agent presses the clerical key when ready to accept the next ACD-call
- The light extinguishes and any queued call is presented immediately

Display clerical time

The queue information will be replaced by the clerical time information while the agent is in clerical state.

EXECUTIVE telephone

```
10 Jul 14:40   +15°  CLERICAL TIME: 02.45
ACD GRP 1                  202
directory               redial     prog
```

STANDARD telephone

```
CLERICAL TIME: 02.45
10 Jul 14:40
```

Personal Efficiency System (PES)

The clerical time procedure can also be executed via PES or CTI.

Capacity

The clerical time counts up to a maximum of 59:55 minutes. After this time the display time is no longer updated but the agent can still be in clerical state.

Limitation

If a call code is required, clerical time can only be programmed with a value between 5 and 255 (seconds).

No clerical time is used after entering a call code for a non-ACD call.

If no fixed clerical time is programmed the system starts displaying the clerical time after 5 seconds and it will be updated in 5-second steps.

The clerical time is not displayed on the telephone after any call code has been entered via PES.

The clerical time is not displayed, if the programmed clerical time is less than 5 seconds.

Programming

3820
Clerical time

This command specifies the clerical time starting the moment a call is completed and ending when the agent is ready again to receive another call.

```
10 Jul 14:40   +15°
CLERICAL TIME          3820 xxxx      zzz
 backward  forward     c/i       return
```

xxxx Enter directory number of ACD-group

zzz Enter desired clerical time in seconds (0 - 255 seconds).
Default data = 5

NOTE: Command 3820 can also be set from an external PC-based CCS-system.

3045
Program ACD clerical

This command allows to specify for which Authorisation Categories (COS) it is permitted to program a key for ACD-clerical.

```
10 Jul 14:40   +15°
PROG ACD CLERICAL ?  C  3045   yy     zz
 backward  forward     c/i      return
```

yy ACD-group number
zz Yes / No

0301
Key programming on agent telephones.

All telephone key functions are programmed via command 0301

```
10 Jul 14:40   +15°
FUNCTION OF KEY       0301 xxxx yy    zz
 backward  forward     c/i      return
```

xxxx enter the agent's directory number
yy enter the relevant key

Programming of ACD clerical key

If the agent shall have her/his own clerical key, a key must be programmed for this purpose:

zz Enter function code = 31

3830
Clerical time ended by key
(End fixed clerical time by pressing the clerical key before time-out?)

This command is used to specify whether or not fixed clerical time can be terminated by pressing a programmed clerical key.

```
10 Jul 14:40   +15°
CLERTIME AND CLERKEYC 3830   xxxx      z
 backward  forward     c/i      return
```

xxxx Enter directory number of ACD-group
z Yes / No

The default value is No (fixed clerical time cannot be terminated by pressing clerical key)

3712
Display clerical time?

This command is used to specify whether or not the remaining / elapsing clerical time shall be shown on the display.

```
10 Jul 14:40   +15°
SHOW CLERICALTIME ?   3712             z
 backward  forward     c/i      return
```

z Yes / No

The default value is No (clerical time is not displayed)

Equipment

A FECU must be connected to the CPU-D4 for following ACD features:

- Entering of multiple call codes (command 3828)
- Displaying of clerical time (command 3712)
- Fixed clerical time **with** clerical key (with or without call codes) (command 3830)

ACD-PAUSE

Definition

Pause status is the status during which the agent is not available for receiving calls and is not logged off from the system.

Use

Using the ACD-pause key it is possible for the agent to make a break without logging off. For leaving the pause status, the agent needs only to press the pause key again (toggle function key).

To avoid the misuse of this option, a pause-interval limit has been introduced.The pause-interval limit is programmable per system (not per ACD-group).

Operation

When an agent needs a break or generally to interrupt the job for a certain time, he can press the pause key without logging off. The lamp of the corresponding key (if any) is on.

During the time the agent is signed passive no ACD-calls will be sent to his extension and a timer counts the time in pause.

When the agent wants to leave the pause status, she/he has to press the pause key again (no PIN and/or agent number required even if those are required for log-on procedure). The pause-key lamp extinguishes.

In case the agent stays in pause longer than the pause time-out limit, she/he will be automatically logged off from the system.

All the pause related information for the agent(s) will be sent to the ACD-MS application for statistics.

It is also possible to execute the pause function via PES.

NOTE: *When the last active agent of the group presses the pause key, all the calls in corresponding queue will be directed to an alternative answering position.*

Capacity

Not applicable.

Limitation

During ACD-Pause state only non-ACD calls are possible.

Programming

0301
Programming of keys on agents' telephones.

All telephone key functions are programmed via command 0301.

```
10 Jul 14:40   +15°
FUNCTION OF KEY       0301 xxxx yy    zz
 backward  forward     c/i      return
```

xxxx enter the agent's directory number

yy enter the relevant key

Programming the ACD pause key

If the agent is to have an ACD-pause key by which he can switch on/off to pause, a key must be programmed for this purpose (see command 0301):

zz Enter the function code 44

3055
Program ACD pause?

This command allows to specify for which Authorisation Categories (COS) it is permitted to program a key for ACD-pause.

```
10 Jul 14:40   +15°
PROG. ACD PAUSE?     3055      yy      z
 backward    forward     c/i      return
```

yy enter the A-COS value. The value can be between 0-15.

z z=Y(yes), ACD pause key can be programmed.
z=N(no), ACD pause key cannot be programmed.

The default value is N (No).

3710
Pause time

By means of this command it is possible to define the time-out limit for the ACD-pause after which the agent in pause status will be automatically logged-off from the system.

The time for pause state is in minutes. The timer for the time-out limit starts by pressing the ACD pause key. If the agent handles a non-ACD call during the ACD pause the timer will be stopped and re-triggered after the call has been finished. The pause time starts once again after disconnection of the call.

```
10 Jul 14:40   +15°
PAUSE TIME           3710              xx
 backward     forward               return
```

xx enter the time in minutes, after which an active agent in pause state will automatically be logged off. The value can be between 1 - 30.

The default value is 5 min.

Equipment

None.

ACD-HELP

Definition

To assist the agent in difficult situations and thus remove stress, reduce the occurrence of potential errors and enable the Call Centre to run as smoothly as possible, the agent can get help from a monitoring supervisor should, the need arise.

Use

A help key can be assigned to each agent telephone. This can be used by the agents to ask for the assistance of the supervisor in difficult situations.

When the key is pressed, a lamp that represents the agent on the supervisor's telephone starts flashing and the telephone rings (if programmed).

The supervisor can then, by pressing the corresponding key, initiate a call on the agent's **Line 2**.

The agent can answer the call and, if desired, set up a conference or extend the call to the supervisor.

Operation

If, during an ongoing call, the agent needs the assistance of the supervisor, he/she presses the help key.
The key on the agent’s telephone, glows steadily, and the corresponding lamp on the supervisor’s telephone flashes rapidly. Ringing is heard, if so programmed.
When the supervisor presses the ACD-Supervision key, a call is initiated to the agent who asked for assistance.
This call is presented on the agent’s **Line 2**.

This type of call overrides blocking (if any) on **Line 2**.

A suitable procedure for the agent is to block **Line 2** before pressing the help key as the call that will be presented on **Line 2** is without doubt the call from the supervisor.
The agent answers the call by pressing the **Line 2**-key.
The agent can use the refer back procedure to switch back and forth between the two parties, or initiate conference.

The supervisor can take over the call whereby the agent initiates transfer.

Capacity

None.

Limitation

A key for monitoring the agent status has to be programmed on the supervisor’s telephone set. Each agent needs a separate monitoring key (ACD-Supervision key).
See ACD-SUPERVISOR GENERAL (107/155 34-ASB 150 02 Uen)

Programming

0301
Key programming on agent telephones.

All telephone key functions are programmed via command 0301.

```
10 Jul 14:40   +15°
FUNCTION OF KEY       0301 xxxx yy    zz
 backward  forward     c/i      return
```

xxxx enter the agent’s directory number
yy enter the relevant key

Programming the help key

If the agent is to have a help key for calling the supervisor, a key must be programmed for this purpose:

zz Enter function code = 32

3046
Program ACD help

This command allows to specify for which Authorisation Categories (COS) it is permitted to program a key for ACD help.

```
10 Jul 14:40   +15°
PROG ACD HELP ?  C   3046   yy     zz
 backward  forward     c/i      return
```

yy enter the A-COS value. The value can be between 0-15.

z z=Y(yes), ACD help key can be programmed.
z=N(no), **not** allowed to program ACD help key.

The default value is N (No).

Equipment

None.

ACD-CALL CODES

Definition

Call codes are codes dialled by the agent when completing an ACD-call and are sent to the external PC-based Call Centre Supervisor. The agent can also enter more than one call code for characterizing the call if required. These codes are checked and stored in the CCS-system and used for further statistical purposes.

It is also possible to define that the ACD-agent has to enter a call code for non-ACD calls during pause state.

Use

A call code is a 1 - 5 digit arbitrary number that is entered after a call has been concluded and during the clerical time, in order to identify incoming calls. If necessary and independent of whether on agent telephone has a clerical key programmed or not, one or several call codes can be entered during clerical state. The call code can be entered via the agent telephone or using PES applications.

To be able to use the stated call codes, a connection of a PC-based CCS program to the PBX is required.

Statistics are obtained concerning the various types of calls - stored as call codes - during a certain time period. For example, for a travel agency it is possible to see how many calls resulted in purchases and how many were merely inquiries.

Operation

In this case the system has to be programmed to accept call codes. Additionally it is possible to program whether multiple call codes are allowed or not.

There are three ways to terminate an ACD-call with call codes

- Fixed (automatic) clerical time without clerical key
- Fixed (automatic) clerical time with clerical key
- Flexible (manual) clerical time with clerical key

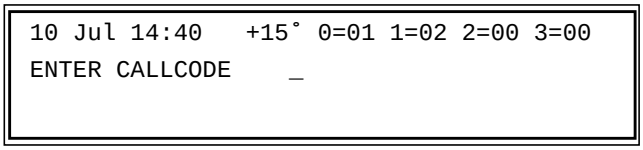
Termination of an ACD-call (call code required):

1. Fixed clerical time without clerical key but with call codes

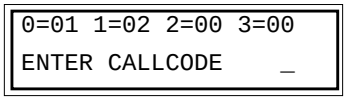
- Replacing the handset or pressing **Clear**
- During the programmed clerical time the agent has to enter a valid call code.

The system asks for a call code:

EXECUTIVE telephone

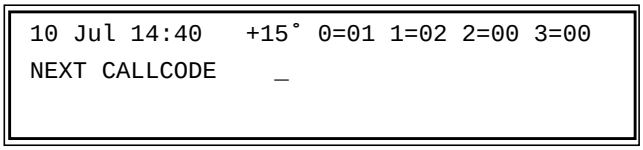


STANDARD telephone

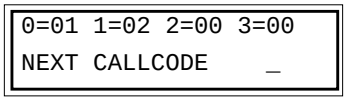


- Dial the 1 - 5 digit code on the key pad
- Press #
- If programmed, the system asks for the next call code (if programmed):

EXECUTIVE telephone



STANDARD telephone



- Enter next call code and press #
  or
  press only # to complete call code procedure
- After the fixed clerical time has elapsed, the agent will be ready to accept new ACD-calls.

2. Fixed clerical time with clerical key and call codes

- Replacing the handset or pressing **Clear**
- The lamp associated with the clerical key flashes slowly
- Press the clerical key to start the call code entering procedure
- The system will ask for a call code:

EXECUTIVE telephone

```
10 Jul 14:40   +15° 0=01 1=02 2=00 3=00
ENTER CALLCODE    _
```

STANDARD telephone

```
0=01 1=02 2=00 3=00
ENTER CALLCODE    _
```

- Dial the 1 - 5 digit code on the key pad
- Press #
- The system asks for the next call code - if programmed:
- Enter next call code and press #
  or
  press only # to complete call code procedure
- The lamp associated with the clerical key is on and glows steadily
- There are now two ways to terminate the clerical procedure. The Agent can wait until the fixed clerical time has elapsed or the ongoing clerical time can be terminated by pressing the clerical key
- In both cases the clerical key light extinguishes and a queued call (if one exists) is presented immediately

3. Flexible clerical time with clerical key and call codes

- Replacing the handset or pressing **Clear**
- The lamp associated with the clerical key flashes slowly
- Press the clerical key to start the call code entering procedure
- The system will ask for a call code:

EXECUTIVE telephone

```
10 Jul 14:40   +15° 0=01 1=02 2=00 3=00
ENTER CALLCODE    _
```

STANDARD telephone

```
0=01 1=02 2=00 3=00
ENTER CALLCODE    _
```

- Dial the 1 - 5 digit code on the key pad
- Press #
- The system asks for the next call code - if programmed:
- Enter the next call code and press #
  or
  press only # to complete the call code procedure
- The lamp associated with the clerical key is on and glows steadily
- When the agent is ready to take new calls, she/he presses the clerical key again.
- The light extinguishes and any queued call is presented immediately

Display clerical time

It is possible to specify that the clerical time be displayed in each of the three procedures described above by programming (see: 'Display Clerical time' ACD CLERICAL TIME in this document)

Call codes in connection with Call Centre Supervisor (CCS)

CCS contains a list of a maximum of 100.000 free programmable call codes, and the entered code is compared with this list. If the entered call code is not listed in CCS, the agent receives an error tone and the call code entering procedure starts once again.

If the agent enters an invalid call code, the display shows the following:

EXECUTIVE telephone

```
10 Jul 14:40   +15° 0=01 1=02 2=00 3=00
INVALID CALLCODE
```

STANDARD telephone

```
0=01 1=02 2=00 3=00
INVALID CALLCODE
```

Deleting the last entered digit

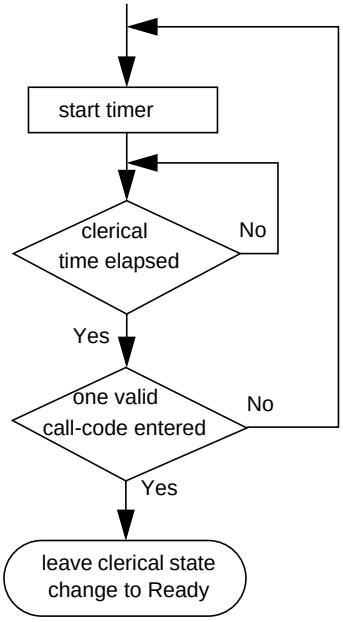
As long as the entered call code is not confirmed with the Enter- or '#'-key, the last entered digit can be deleted by pressing the '-' key.

Monitoring of Timeouts

It can be programmed, if monitoring of the number of timeouts should be executed.
Monitoring number of timeouts is only considered if a fixed clerical time is programmed (command 3820 = value>0) and call codes are required (command 3822 = YES).

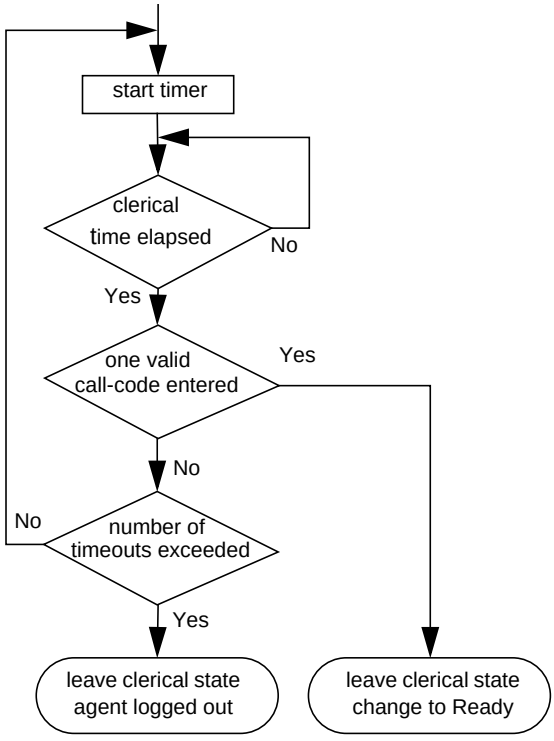
- monitoring of timeouts is not programmed:

If the fixed clerical time expires but no call code has been entered or completed, a TIMEOUT message will be displayed for two seconds and the clerical time will be restarted.
If at least one valid call code has already been entered, the agent goes active again.



- monitoring of timeouts is programmed:

If a programmable number of timeouts is exceeded, the ACD-agent will be logged out automatically if no valid call code is entered.



If a timeout procedure starts, the display shows the following for a period of two seconds:

EXECUTIVE telephone

```
10 Jul 14:40   +15° 0=01 1=02 2=00 3=00
TIMEOUT
```

STANDARD telephone

```
0=01 1=02 2=00 3=00
TIMEOUT
```

Call Codes for non ACD calls

Non-ACD traffic handled by an extension programmed as an ACD-agent position can be supervised and logged by entering call codes for non-ACD calls.

If it is programmed, the ACD-agent has to enter a call code after disconnection of an outgoing external non ACD call. Entering call codes for non-ACD calls is only possible in ACD-agent state ’pause’.
Clerical time is unavailable in this case.

Personal Efficiency System (PES)

The clerical time- and call code-procedure can also be executed via PES or CTI.

Capacity

Up to 100.000 (0-99999) call codes can be used in conjunction with the CCS-system.

Limitation

Call codes are handled only if an ACD-MS application is running.

If a call code is required (command 3820 = YES) and the programmed fixed clerical time is less than 5 seconds, the clerical time will be set to 5 seconds automatically (per default).

Entering call codes for non-ADC calls is only possible in ACD-agent state ’pause’.

Entering of multiple call codes for non-ACD calls is not possible.

Deleting of the last entered digit for call codes for non-ACD calls is not possible.

No clerical time is used after entering a call code for a non-ACD call.

A maximum of three attempts to enter a call code for non-ACD calls are possible.

Programming

3822
Callcode required?

This command is used to state whether or not an ACD-agent must specify a call code after a terminated ACD-call. Call codes can be used for activity statistics.

```
10 Jul 14:40   +15°
CALLCODE REQUIRED? C 3822  xxxx          z
backward    forward    c/i          return
```

xxxx — enter the ACD-group directory number

z — z=Yes, call code required
z=No, no call codes required (default value).

3828
Enter multiple call codes during clerical state allowed?

This command is used to state whether or not the use of multiple call codes is allowed.

```
10 Jul 14:40   +15°
MULTIPLE CALLCODE ? C 3828   xxxx        z
backward    forward    c/i          return
```

xxxx — enter the ACD-group directory number

z — z=Yes, the agent can enter more than one call code
z=No, only one call code can be entered (default value)

3829
Number of timeouts before log-out

This command is used to state whether or not the number of timeouts should be limited or not.

```
10 Jul 14:40   +15°
NUMBER OF TIMEOUTS  C3829 xxxx         zzz
backward    forward    c/i          return
```

xxxx — enter the ACD-group directory number

zzz — enter number of timeouts (value must be between 0 and 255)
zzz=0: no monitoring of timeouts

3711
Non ACD call code request?

This is used to state whether the ACD-agent has to enter a call code after disconnection of an outgoing external non-ACD call.

```
10 Jul 14:40   +15°
NONACD CALLCODE REQ?  3711               z
backward    forward                 return
```

z — z=Yes, the agent has to enter call codes for non-ACD calls
z=No, no call code has to be entered for non-ACD calls (default value)

Equipment

A FECU must be connected to the CPU-D4 for following ACD features:

- Entering of multiple call codes (command 3828)
- Displaying of clerical time (command 3712)
- Monitoring of timeouts (command 3829)
- Fixed clerical time **with** clerical key (with or without call codes) (command 3830)

ACD-NIGHT SWITCHING

Definition

The ACD-groups are also equipped with the night service function. When this feature is activated, the incoming calls (for the ACD-group that is night switched) will be rerouted to a programmed night answer position.

Use

Night switching of ACD-groups is an efficacious way for handling ACD calls after office hours.

When this feature is activated, the incoming calls (for the ACD-group that is night switched) will be rerouted to a programmed night answer position, thus distributing the calls after office hours.

It is recommended to assign the night-switching functions (for individual ACD-groups and/or for all of them simultaneously) to a name selection key that is equipped with a lamp.

Operation

When the ACD-group(s) is(are) night switched, all incoming calls will be routed to a programmed night answering position (individual for ACD-group) (see command 3827). If an ACD-group has calls in queue and goes into night-switching, this will affect only the new incoming calls, which will be routed to the corresponding night answering position; the remaining calls in queue will be answered, as usual, by the agents of this ACD-group.

Night answering position of the ACD-group

This can be:

- a valid directory number, or
- an ACD-group that has **not** been night switched

In the second case, if one of the three overflow criteria is fulfilled, the caller will receive busy tone and rerouting is rejected.

The busy tone will be sent also if the night answering position is a night-switched ACD-group. The reroute of the call(s) will also be rejected.

In all other cases rerouting will be performed.

Only the extensions that have the right authorisation category (COS) for night-switching ACD-group(s) can night-switch (on/off) the corresponding ACD-group. The procedure is as follows:

Night-switching the ACD-group 0

- enter the night switching procedure for ACD-group 0: *890 or
- press programmed night-switching key (name-selection key). Verification tone is heard and the corresponding lamp lights steadily.

Day-switching the ACD-group 0

- repeat the above-mentioned procedure for the night-switched ACD-group 0, to switch it onto day service. The night-switching lamp extinguishes.

Night-switching the ACD-group 1-7

- enter the night switching command for ACD-group 1-7: *891 - *897 or
- press the programmed night-switching key. Verification tone is heard and the corresponding lamp lights steadily.

Day-switch of the ACD-groups 1-7

- repeat the above-mentioned procedure for the night-switched ACD-groups 1-7, to switch them day service.

Night-switching of all ACD-groups simultaneously

- enter the night switching command for all ACD-groups: *898 or
- press programmed night-switching key. Verification tone is heard and the corresponding lamp lights steadily.

Day-switching of all ACD-groups simultaneously

- repeat the above-mentioned procedure for all night-switched ACD-groups, to switch them simultaneously day service.

NOTE: ACD-group night services can be activated only by the extension(s) which are assigned to a proper class of service which permits this function.

Capacity

Not applicable.

Limitation

None.

Programming

See under “ACD-group night switching” in
ACD-GROUP (105/155 34-ASB 150 02 Uen).

Equipment

None.

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
SEA/EBBMP C. Bertsch	SEA/EBBX/E	107/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved	Kontr/Checked	Datum/Date / Rev	Tillhör/Referens-File/Reference
SEA/EBBMP		99-07-15 / D	ASB 150 02
		Database reference	
		107.fm	

ACD-SUPERVISOR

Contents **Page**

ACD-SUPERVISOR GENERAL 2

ACD SILENT INTRUSION 4

ACD STATISTICS 7

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
		107/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved	Kontr/Checked	Datum/Date	Rev / Tillhör/Referens-File/Reference
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ACD-SUPERVISOR GENERAL

Definition

A supervisor is an agent who monitors (supervises) the incoming traffic to ACD agents. A supervisor supervises also agents and assists them in difficult situations.

Use

A supervisor must be equipped with an EXECUTIVE telephone with ACD Supervision keys (monitoring keys).

As an option the agent can be equipped with an EXECUTIVE telephone and the PC-based program CCS (Standard or Basic Edition).

General

The supervisor's telephone set is a normal agent telephone that is to be used only for monitoring the queues. It can be programmed whereby all queues are passive but the telephone is marked active.

The supervisor can now read the queue messages on the telephone in the traffic mode, and statistics in the programming mode.

The supervisor can take measures to prevent queues, for example by:

- using more agents
- more agents activating the overloaded queue
- the supervisor's participating in traffic handling

Monitoring keys

Aided by the lamp indications on ACD Supervision (monitoring) keys, the supervisor can obtain an overview of the traffic situation for each agent separatly. The following indications are supplied:

Extinguished	Agent telephone is in passive mode
Steady glow	Agent telephone is active but free
Slow flash	Agent telephone is in clerical mode
Rapid flash	Agent has pressed help-key
Steady glow with short breaks	Agent has an ongoing call

Working as an agent

The supervisor can also work as an agent if needed (heavy traffic etc.). In this case he can use all the features that an agent can use. If the supervisor is to participate in ACD traffic handling, then each ACD-group that is to be served by the supervisor shall be represented by a key on the supervisor's telephone set (ACD-group keys). To all queues, which have programmed an ACD-group key at the supervisor's telephone set, the lowest priority should be assigned.

See under ACD-AGENT (106/155 34-ASB 150 02 Uen).

Operation

Answer incoming ACD-calls

See under ACD-AGENT (106/155 34-ASB 150 02 Uen).

Read-out status of monitored agents

The lamps on the ACD Supervision (monitoring) keys for the various agents show the traffic situation.

Help signal from an agent

If an agent presses her/his 'help key' then the corresponding lamp will start flashing rapidly and ring signals are supplied on the basis of what has been programmed for the key.

The supervisor answers the call by pressing the key corresponding to the flashing lamp. A call is then initiated to the relevant agent. The call will automatically seize **Line 1** or **Line 2**. The call is presented on the called agent's **Line 2**.

When the agent answers, speech connection is established. If so desired, the agent can set up a conference comprising calling party, agent and supervisor.

Capacity

The number of supervisors is unrestricted. The number of agents, that each supervisor telephone can monitor, is depending upon the number of programmable keys.

Limitation

Only one supervisor can be equipped with CCS Standard or CCS Basic.

Programming

Programming of ACD Supervision (monitoring) keys for supervisors. The supervisor(s) can program monitoring keys for the individual agents who are members of the agent group to which the supervisor is assigned.

Note: For each agent, who is to be monitored by a supervisor has to be programmed one monitoring key on the supervisor telephone set. Only then the agent status can be read out.

0301
Function of key

Supervision key (monitoring key).

```
10 Jul 14:40   +15˚
FUNCTION OF KEY       0301 xxxx yy    zz
 backward  forward     c/i      return
```

xxxx Enter supervisor's directory number

yy Select key (00 - 48)

zz Enter function code = 17

Step to command 0302

0302
Associated number

```
10 Jul 14:40   +15˚
ASSOCIATED NUMBER     0302 xxxx yy  zzzz
 backward  forward     c/i      return
```

zzzz Enter monitored agent's directory number. (1 - 4 digits)

Step to command 0303

0303
Ringing alternative

```
10 Jul 14:40   +15˚
RINGING ALTERNATIVE   0303 xxxx yy     z
 backward  forward     c/i      return
```

z Enter required ringing type 0 - 5

Equipment

The supervisor must be equipped with an EXECUTIVE telephone. If s CCS system (Standard or Basic) is to be connected, a free V.24 interface must be available on CPU-D_ - or AUX_ board.

ACD SILENT INTRUSION

Definition

The supervisor may at any time intrude an agent who is logged on. The supervisor may also intrude if an ACD agent request for help.

During silent intrusion no warning tone is heard.

Use

Silent intrusion will be used by the supervisor to support the agents.

Operation

START SILENT INTRUSION

SUPERVISION KEY and the CCS programs (Standard or Basic) indicate the agent demanding support. Apart from call on Line 2, silent intrusion gives the supervisor an alternative possibility to offer his support.

Silent intrusion is started with code * 65 *. Then the directory number of the selected agent has to be dialled and key # has to be pressed. The agent has to be logged on.

Short operation

Code * 65 * may be stored on a NAME-SELECTION key.

For indicating the directory number, one of the following keys can be used:

- ACD-supervision key
- Supervision key
- Name-Selection key
- Dedicated Intercom Line

The operation has to be terminated with key „#“.

Supervisor’s telephone display

The display indicates the same state as in case of normal intrusion.

Agent’s telephone display

There is no alteration of the display at silent intrusion.

TERMINATE SILENT INTRUSION

There are three possibilities to terminate the silent intrusion and to continue the call (agent or supervisor):

- The agent goes on-hook
- The supervisor goes on-hook
- The supervisor takes over the call

The agent goes on-hook

If the agent goes on-hook during silent intrusion the supervisor is connected to the call.

The supervisor goes on-hook

If the supervisor goes on-hook silent intrusion is terminated. The agent and his calling party remain connected.

The supervisor takes over the call

For taking over the call, the supervisor has to dial the code (normally ’8’) for intrusion or has to press, if pre-programmed the key for intrusion. Thus, the agent’s telephone becomes free.

Capacity

It depends on the number of supervisors, agents logged on and possible conference calls how many simultaneous calls with silent intrusion can be possible.

Limitation

None.

Programming

When the silent intrusion is already installed, you can alter via RASC the following parameters:

Facility access

The ACD supervisor (calling extension) needs for the commands 3004 and 3072 a „Yes“.

3004
Intrusion?

This command states which A-COS (access class-of-service) is allowed to request intrusion.

```
10 Jul 14:40   +15°
INTRUSION              3004   xx        z
 backward  forward     c/i      return
```

xx — Enter facility category (0 - 15)

z — Enter relevant function:
Y = Intrusion permitted.
N = Intrusion forbidden (default data)

3072
Silent intrusion?

This command specifies which A-COS (access class-of-service) is allowed to request silent intrusion.

```
10 Jul 14:40   +15°
SILENT INTRUSION ?        3072   xx       z
 backward  forward     c/i      return
```

xx — Enter facility category (0 - 15)

z — Enter relevant function:
Y = Silent intrusion permitted.
N = Silent intrusion forbidden
(default data)

Extension parameters

0101
Facility COS

This command states the facility class of service for each extension. ACD supervisors need a facility COS that allows intrusion and silent intrusion (commands 3004 and 3072).

```
10 Jul 14:40   +15°
FACILITY COS           0101 xxxx       zz
 backward  forward     c/i      return
```

xxxx — Enter extension's directory number

zz — Enter relevant facility category (0 - 15)

0107
Break-in allowed?

This command states if others are allowed to intrude to the specified extension. Enter “Yes” for the ACD agent

```
10 Jul 14:40   +15°
BREAK-IN ALLOWED       0107 xxxx        z
 backward  forward     c/i      return
```

xxxx — Enter extension's directory number

z — Enter relevant function:
Y = Intrusion permitted (default data).
N = Intrusion forbidden

Directory number

ASB 15002 creates the directory number to activate the silent intrusion procedure *65* automatically upon restart.

Commands for intrusion

a - Trunk parameters

1007
Break-in allowed?

(accessible only via RASC)

This command states whether or not intrusion shall be permitted during an ongoing call. However, intrusion is never permitted for data communications.

xxxx	enter the trunk's directory number
z	=Yes, intrusion allowed =No, intrusion not allowed (default value)

b - Define facility digits

2406
Executive intrusion

(accessible only via RASC)

If an extension encounters busy on a call to another extension, the extension can initiate intrusion by pressing a predetermined key.

This command defines the facility digit for intrusion. Only extensions with a service category permitting initiation of intrusion are allowed to initiate this facility. See command 3004.

Intrusion can only be executed, if the category of both parties in the ongoing call permit intrusion. See command 0107 and 1007.

If the digit has been used previously for another facility, it will be erased, i.e the “old” facility will be removed from the system.

Equipment

No additional hardware required

ACD STATISTICS

Definition

ACD function offers the user three forms of statistics:

- built-in statistics
- Management System MS
  (for Supervisors)
  a) CCS Standard
  b) CCS Basic
- Agent Desktop System
  (for Agents and Supervisors)
  a) CCA

Use

The ACD-function provides several different possibilities of obtaining traffic monitoring and statistics. In its simplest form this is obtained as an included part of the system.

The ACD-function embraces a number of included statistics functions. Statistics facilitate assessment of a system's quality regarding answered calls and average queue times.

The statistics are calculated during a certain time-period. This time period can be programmed for a period of up to one month.

The following details are obtained per measurement period:

- Total number of calls per ACD-group
- Total number of answered calls per ACD-group
- Average queue time per ACD-group

Two threshold times (T1 & T2) can be programmed for use as reference for approved queuing time. During the defined time periods the following information can be obtained:

- Number of calls answered before programmed time T1
- Number of calls answered after programmed time T1
- Number of calls abandoned before programmed time T2 is reached
- Number of calls abandoned after programmed time T2 is reached

Printout of included statistics

The obtained statistics can be printed out on a connected printer (***40#**) connected to a V.24-port in ASB 150 02.

The statistics are presented on one line on the printer. The information is read from the left:

- ACD-group
- Calls total
- Answered before T1
- Answered after T1
- Abandoned before T2
- Abandoned after T2
- Average queue time
- Time T1/T2

Note that obtained statistics are erased when a new time period is programmed.

Alternatively, the included statistics can be fetched directly from the display on an EXECUTIVE telephone.

Operation

The included (into the system) statistics function can be printed out on a connected printer. The extension must possess a category that permits initiation of printouts.

Command:

*** 40 #**

It is advisable to store the command on a name selection key for easier handling.

Capacity

Not applicable.

Limitation

Not applicable.

Programming

Commands for build-in ACD-statistics

3701
Define time period for statistics

This command is used to define the time period (up to one month) it is intended to monitor. With commands 3805 - 3807 it is possible to read a list of the total number of calls, number of answered calls and the average queuing time.

When a new time period is initiated, all values for commands 3805 - 3807, 3812 - 3815 are reset.

```
10 Jul 14:40   +15°
PERIOD INITIATE       3701            >
 backward  forward     c/i      return
```

Press **Enter**.

The display shows:

```
10 Jul 14:40   +15°
START TIME=   zzzzzz END TIME=   qqqqqq
 backward  forward     c/i      return
```

zzzzzz Enter start time DDHHMM

qqqqq Enter end time DDHHMM
DD = day 00 - 31
HH = hour 00 - 23
MM = minute 00 - 59

3805
Read the number of calls within the time period

State the total number of calls for the ACD-group during the defined time period.

```
10 Jul 14:40   +15°
NUMBER OF CALLS       3805 xxxx    zzzzz
 backward  forward     c/i      return
```

xxxx Enter the directory number of ACD-group

zzzzz Shows total number of calls.

3806
Read the number of answered calls within the time period

State the number of answered calls for the ACD-group during the defined time period.

```
10 Jul 14:40   +15°
NUMB. OF ANSW.CALLS   3806 xxxx    zzzzz
 backward  forward     c/i      return
```

xxxx Enter the directory number of ACD-group

zzzzz Show number of answered calls.

3807
Read average queue time

State the average queue time for calls to the ACD-group during the defined time period.

```
10 Jul 14:40   +15°
AVER. QUEUING TIME    3807 xxxx      zzzzz
 backward  forward     c/i      return
```

xxxx Enter the directory number of ACD-group

zzzzz Show queuing time in seconds

3810
Threshold time for wait in queue

With this command a threshold time can be set that corresponds to an acceptable waiting time.

With the help of read commands 3812 and 3813 it is possible to read how many calls were answered before and after the programmed time.

The number of calls is in respect of the time period defined with command 3701.

```
10 Jul 14:40   +15°
STATISTIC TIME (T1)   3810 xxxx      zzz
 backward  forward     c/i      return
```

xxxx Enter the directory number of ACD-group

zzz Enter acceptable queuing time (1 - 255 seconds)

3811
Threshold time for abandoned calls

Here is stated the time to be used to register which calls have not been answered and which were abandoned after this time.

```
10 Jul 14:40   +15°
STATISTIC TIME (T2)   3811 xxxx      zz
 backward  forward     c/i      return
```

xxxx Enter the directory number of ACD-group

zzz Enter acceptable queuing time (1 - 255 seconds). Default data = 15

With help of read commands 3814 and 3815, it is possible to read how many calls were abandoned before and after the programmed time.

3812
Number of answered calls before time T1

Here is stated the number of calls during the defined time period that were answered before the time stated in command 3810.

```
10 Jul 14:40   +15°
ANSW. CALLS (-T1)     3812 xxxx    zzzzz
 backward  forward     c/i      return
```

xxxx Enter call number of ACD-group

zzzzz Show number of calls answered before programmed time during time period

3813
Number of answered calls after time T1

Here is stated the number of calls during the defined time period, answered after the time stated in command 3810.

```
10 Jul 14:40   +15°
ANSW. CALLS (T1+)     3813 xxxx    zzzzz
 backward  forward     c/i      return
```

xxxx Enter call number of ACD-group

zzzzz Show number of calls answered after programmed time during time period

3814
Number of abandoned calls before time T2

Here can be read the number of calls during the defined time period that were unanswered and abandoned before the time stated in command 3811.

```
10 Jul 14:40   +15°
DISCONN. CALLS(-T2)   3814 xxxx     zzzz
 backward  forward     c/i      return
```

xxxx Enter call number of ACD-group

zzzzz Show number of unanswered calls that were abandoned before time T2

3815
State number of abandoned calls after time T2

Here is stated the number of calls during the defined time period that were unanswered and abandoned after the time stated in command 3811.

```
10 Jul 14:40   +15°
DISCONN. CALLS(T2+)   3815 xxxx    zzzzz
 backward  forward     c/i      return
```

xxxx Enter call number of ACD-group

zzzzz Show number of calls unanswered and disconnected after time T2

3068
Printout of ACD statistics

To be able to print out the statistics information stored in the system the extension must possess the appropriate authorisation. This is stated by assigning the selected extension(s) a facility category where the function is open.

```
10 Jul 14:40   +15°
PRINT ACD STAT ?      3068   xx        z
 backward  forward     c/i      return
```

xx Enter facility category 0 - 15

z Enter Y = Printout permitted
Default data = N

0101
Set correct category for the extension

The extension or extensions who shall be permitted to initiate printouts is/are assigned the above selected category.

```
10 Jul 14:40   +15°
FACILITY COS          0101 xxxx       zz
 backward  forward     c/i      return
```

xxxx Enter extension's directory number

zz Enter relevant facility category 0 - 15

3707
Printout command

With this command a printout of ACD-statistics is ordered.

```
10 Jul 14:40   +15°
PRINT STATISTICS ?    3707            z
 backward  forward     c/i      return
```

z Enter Y = start printout

Equipment

To obtain a printout the connection of a printer to an (installed in the system) AUX board (V.24/RS232C port) is required. Output of data records takes place via the first free I/O-channel that is activated with command 6011. Programming of the type of printer, bit rate and character set is achieved via commands 6006 - 6009.

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
SEA/EBBMP C. Bertsch	SEA/EBBX/E	108/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved / Kontr/Checked		Datum/Date / Rev	Tillhör/Referens-File/Reference
SEA/EBBMP		99-07-15 / E	ASB 150 02
		Database reference	
		108.fm	

ACD APPLICATIONS

Contents **Page**

CALL CENTRE SUPERVISOR Standard Edition 2

CALL CENTRE SUPERVISOR Basic Edition 8

FEATURE COMPARISON OF CCS Standard with CCS Basic. 11

CALL CENTRE ASSISTANT (CCA) 15

CALL CENTRE SUPERVISOR Standard Edition

General

Call Centre Supervisor Standard (CCS Standard) is an advanced monitoring and statistics processing program for ACD-applications in ASB150 02. The program is PC/WINDOWS-based and works in real-time, which means that the ACD-status information is continuously updated. Thus updated information concerning traffic in an ACD-system is always available and it is possible to act immediately if so required.

The PBX sends information via a serial interface (V.24/RS232C). The program presents, processes and stores the information. Statistics are transferred after each call to the PC's disk memory for updating the archives. Monthly database information can be transferred to Back-up in order to unburden disk storage. This data can later be restored to provide historic reports.
Data reports as ASCII files are available for post processing purposes. It is possible to export the information in different formats (ASCII, Winword, Excel, Lotus, etc.).

Available versions of the CCS Standard Edition:

CCS Standard V1.x	designed for Windows 3.11 for Workgroups
CCS Standard V2.x	designed for Windows 95

CCS Standard V2.x can also run under Windows 3.11 if the specific hardware requirements are fulfiled.

The following description is applicable for both versions - CCS Standard V1.x and CCS Standard V2.x as well. CCS Standard V2.x is based on the same functionality as V1.x. Some new improvements were implemented. The new features of CCS Standard V2.x are described under "New features in CCS Standard V2.x".

Generally speaking the functions of the program can be divided into three main sectors:

- Real-time presentation
- Real-time statistics
- Report generation

Real-time presentation

The presentation of real-time status information on the PC screen is provided in different windows.

The program uses the following collective designations:

- ACD-Group = Agents who have logged onto a certain queue
- ACD-agent group = An arbitrary group of agents that can be formed and used for presentation and statistics

The agent group has no equivalent in the ASB 150 02 system, it exists only in the CCS Standard program.

Real-time status for each individual group is presented in graphic form on the display as a multicoloured histogram. Each colour represents a stated status position.

In each histogram a digit is also presented that states the number of agents who are in the indicated status.

The following status information is presented:

- Available
- Queue
- Ring
- Talk
- Clerical
- Occupied

For agent groups the status is provided in the corresponding manner although with other information.

Detailed information can be fetched from group level all the way down to agent level or trunk level, depending on which window is used.

Detailed information that is supplied for different groups:

- Agent's name -> ACD- and Agent-groups
- Time of current status -> ACD- and Agent-groups
- Extension number -> ACD- and Agent-groups
- Trunk number -> ACD- and Agent-groups

- ACD-group association -> Agent groups

Individual detailed information for each individual agent and trunk is obtained by selecting another window.

Real-time statistics

Processing in real-time is going on continuously and provides access to statistics relevant to key events in the ACD-system. The statistics are presented in conjunction with the relevant group window in a special window.

Real-time statistics for ACD-groups:

- Calls Offered
- Calls Answered
- Calls Transferred In
- Calls Abandoned
- Calls Overflowed Out
- Calls Overflowed In
- Calls Rejected
- Service Level%
- Service Level Total
- Average Queue
- Average Ring
- Average Wait to Answer
- Average Wait to Abandon
- Longest Wait

Real-time statistics for Agent-groups:

- Calls Offered
- Calls Answered
- Calls Abandoned
- Average Ring to Answer
- Average Ring to Abandon
- Occupancy%
- Longest Ring
- Longest Talk
- Longest Clerical

Alarm values

Alarm values (threshold values) can be programmed for all ACD-agents and agent groups with regard to real-time statistics.

The alarm values are defined to automatically obtain indications of non-desirable situations (e.g. maximum queue length or time; maximum ringing time etc.). Alarm is indicated by digit indication, histogram or by a change of colours of statistics values.

Alarm values for ACD-agent groups:

- Average time in queue (seconds)
- Average time in ring (sec.)
- Average wait to abandon (sec.)
- Average wait to answer (sec.)
- Calls abandoned (%)
- Calls in queue (no.)
- Longest call in queue (sec.)
- Service Level (%)

External status displays

As an additional accessory to the real-time status and statistics presentation on the PC-display it is possible to connect external large status displays.

The status displays are intended for installation at agent groups so that essential information can be issued by the supervisor.

The messages on the display consist of a combination of free text and/or key values such as the number of abandoned calls and current queue status.

Displays supported:

- Data Display:

- Single Line, Single Colour

- Single Line, Multi Colour (3)
- Multi Line (3), Single Colour
- Multi Line (3), Multi Colour (3)
- Multi Line (8), Multi Colour (3)

- On Screen Displays

- 1 Line, 5 Colours
- 3 Line, 5 Colours

Report Generation

Statistics processing and filing for report generation

Data is sent regularly to the program's database for processing and filing. Up to nine different main reports can be generated from the database. The reports can be read directly from the display or be printed out on a printer connected to the PC.

If no more information can be stored in the fixed disk memory, an automatic indication is obtained so that data can be transferred to a floppy disk for filing. The data can later be retrieved and provide reports. This means that statistics history can be made available for an unlimited period of time.

The reports may also be exported to a disk in formats that can be imported into Excel or Lotus spread sheets.

Agent performance (Agent group)

This report provides a detailed overview of the call handling by the respective agents.

Agent activity (Agent group)

The report shows the distribution of ACD-calls among the various queues where the agent has been active as well as the mean call duration for the relevant queue.

Trunk utilisation (ACD-group)

This report provides detailed information on how the trunks belonging to an ACD-group have been used.

Agent group performance (Agent group)

The report provides a total overview of the productivity of an agent group.

Answers report (ACD-Group)

The report shows how many calls have been answerred, as well as data on average answering time, longest answering time and the number of answered calls within a defined period of time (seconds) and service level.

Delay time: abandoned calls

The report supplies information concerning the number of abandoned calls in relation to the total number of calls within a defined period of time (seconds), longest waiting time and average waiting time for abandoned calls.

Incoming ACD-calls (ACD-group)

The report provides detailed information about the incoming calls to an ACD-agent group, such as:

- abandoned calls
- incoming and outgoing diverted ACD-calls
- calls rerouted to the ACD-group answering position due to:
  - •no reply within the pre-defined time period
  - •maximum queue length
  - •overflow of the waiting time limit

Origin of call (ACD-group)

This report shows in detail the origin (source) of the ACD-calls. In addition to the total number of ACD-calls, the number of calls received from PBX-operator, internal lines and trunks are stated. The number of manual-

ly diverted or automatically redirected calls received by the group, is also stated. It is also possible to use more than one call code for characterizing a completed call.

Coding of ACD-calls

To each incoming ACD-call the agents can assign a call code. The agent can enter it by using the telephone key set. The entered call codes will be listed then in this report. The report supplies the total number of calls in each category. Up to 200 different codes can be used.

Formatting of reports

The main reports can be formatted in a number of different ways in order to obtain reports. See table next page.

Different report formats are possible:

- character-separated files
- comma-separated files (CSV)
- crystal reports (RPT)
- Data Interchange Format (DIF)
- Excel 2.1 (XLS)
  - 3.0 (“)
  - 4.0 (“)
  - 5.0 (“)
- Lotus 1-2-3 (WK1)
  - (WK2)
  - (WK3)
- Quattro Pro 5.0 (WB1)
- Record Style
- Tab-separated text
- Tab-separated values
- Text
- Word for DOS
- Word for Windows
- Word Perfect

New features in CCS Standard V2.x

- Possibility to run under MS Windows 95
- Non ACD information
- ACD Pause information
- Banded Alarms
  It is possible to generate alarms for elements that are within a band or that are outside of a band.
- Print Queue Management
  Makes it possible to view the reports that are queued for scheduled printing during the current day. The user will be able to delete any report in the queue, but it is not possible to change the time of printing.
- Macro Scheduling
  A new dialog was added to allow the user to schedule macros for printing.
- Enhancement of External Device Driver
- A new protocol for driving external devices was created for CCS. This will allow different types of external devices to be connected to the CCS, not just wallboards.
- New Graphical Reports
  ACD Group Calls Answered Graphical report
  ACD Group Calls Abandoned Graphical report
  ACD Group Agent Activity Graphical report
  ACD Group Call Breakdown Graphical report
  ACD Group Call Handling Graphical report
- Crystal Reports V5.o
  CCS is shipped with the most up-to-date version of the Crystal Reports runtime engine.
- Auto Reboot
  The CCS can now be configured to automatically reboot once a week.

Capacity

The Application software is designed for a maximum capacity of:

- 30.000 calls/day
- 4000 calls/hour
- 8 ACD-groups
- 60 trunk lines

- 1000 (0-999) Agent PIN codes
- 100.000 (0-99999) different Call Codes can be stored.

Limitations

- Only **one** CCS program (either Standard or Basic) can have a physical connection to the ASB 150 02 System

Programming

See START OF OPERATION 2/1537-ASB 150 02 Uen.

Equipment

Protection Unit

An adaptation unit (also known as dongle) is required for every software release. This determines the number of agents supported by the system according to the structure of the product.

System Telephone

The following telephones of the Dialog 3000 series may be used in combination with CCS Standard.

- DBC 211
- DBC 212
- DBC 213

Connection to the ASB 150 02

The following hardware is required for connection of the CCS Standard to the ASB 1500 02.

- V.24 cable to connect ASB 150 02 and the PC

For detailed information about the connection to the ASB 150 02, see document START OF OPERATION (2/1537-ASB 150 02 Uen).

For detailed information about the installation of the software, see Installation Guide.

Personal Computer

CCS Standard requires the following minimum configuration of personal computer:

Hardware:

- 100% IBM compatible
- ISA architecture
- CCS Standard V 1.x: Pentium 75MHz processor (or higher)
  CCS Standard V2.x: Pentium 133MHz processor (or higher)
- 16 MB RAM
- Bus mouse
- one internal 3.5 inch disk drive
- 850 MB free hard-disk space
- One standard serial port, configured as COM 1
- One standard serial port, configured as COM 2 (only required if Data Display(s) is/are used
- One parallel port for the adaptation unit and system printer
- SVGA graphics card with minimum 1 MB of memory and minimum resolution of 800x600
- 15 inch SVGA non-interlaced colour monitor
- CD-ROM drive

Software:

- MS-DOS 6.0 or higher and
  MS Windows 3.11 for Workgroups
  for Version 1.x and Version 2.x

  -or-
- MS Windows 95
  for Version 2.x

Documentation

For supply of the end-user with detailed information see also the user documentation for the CCS Standard. The whole documentation is stored on a CD-ROM in Adobe PDF (printable document format) in two versions (designed for screen viewing and designed for printing). The CD-ROM is divided into two parts, one for V1.x and one for V2.x:

- BusinessPhone Call Centre Supervisor - User's Guide
- BusinessPhone Call Centre Supervisor - Installation Guide (for CCS Sandard and CCS Basic)
- BusinessPhone Call Centre Supervisor - Quick Reference Guide

There are separate User's Guides for V1.x and V2.x. The Installation Guide and the Quick Reference Guide are the same for both versions.

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		108/155 34-ASB 150 02 Uen	
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CALL CENTRE SUPERVISOR Basic Edition (V1.x)

General

Call Centre Supervisor Basic (CCS Basic) is a stripped-down version of CCS Standard. The CCS Basic system provides basic real-time statistics and historical reporting for evaluation of ACD data. It provides ACD information on screen, processes and archives information in real-time into a hard-disk located database (Borland Database). Monthly database information can be transferred for backup in order to make available more disk space. This data can later be restored to provide historical reports. It is possible to export the information in the database to different formats (ASCII, Winword, Excell, Lotus, etc.)

Use

An ACD-Management System has to handle a vast amount of information concerning all aspects of a call-centre application. The CCS Basic plays an important role in all areas of call-centre operation. CCS Basic enables the user to set up, control and monitor call centre (ACD) resources and activities using Windows dialogs. It is very comfortable for a supervisor to monitor the call centre and thus to achieve more customer satisfaction.

OPERATION

CCS Basic is very flexible, because it can be run on different operative levels by a range of users, who can easily identify the information they need and use the control they are authorized to exercise.

Structure

The central point of the CCS Basic is the framework window (same as in CCS Standard). The framework window is a floating window and comprises a toolbar and menu structure from which all CCS Basic functions are accessed.

The program can be divided into the following main areas:

- Users
- system setup and Management
- real-time information
- dynamic changes
- reports

Users

The system user sets up a new user and assigns access to the setup, maintenance, monitoring and control function relevant for the required operative level of the user. The user can then set up a number of viewing profiles that they can use to tailor the CCS Basic to precisely meet current needs.

System and setup Management

Apart from the initial setting up of basic information, CCS Basic is able to manage and setup ACD groups as follows:

- setting and editing ACD group names
- adding Agents and editing existing Agent details
- setting up and editing of call codes
- managing dynamic changes

Real-time information

On-line statistics are processed with reference to time and threshold levels that can be set up by system administration routines. Where specifically set values are exceeded the respective statistics will be shown as alarm values. The ACD group/agent real-time information is displayed in the form of trend graphs.

Dynamic changes

Operation and maintenance parameters set in CCS Basic are dynamically transferred to ASB 150 02. This means that changes in the basic configuration will take effect without the need to restart either CCS Basic or Windows. The following parameters can be managed dynamically:

- queue-length parameters

- queue messages and message-timing parameters
- set agent passive parameters
- clerical time
- requirement of identity codes
- requirement of call codes
- ACD group thresholds

Reports

CCS Basic includes a standard reports package of built-in reports covering the following reporting areas:

- ACD-group reports
- agent reports
- call-code reports

Capacity

The Application software is designed for a maximum capacity of:

- 30.000 calls/day
- 4000 calls/hour
- 8 ACD-groups
- 60 trunk lines
- 1000 (0-999) Agent PIN codes
- 100.000 (0-99999) different Call Codes can be stored.

Limitations

- only one CCS program (either Standard or Basic) can be connected to an ASB 150 02 system
- external status display (such as wallboards and on-screen displays) are not supported by CCS Basic
- CCS Basic does not support Agent groups

Programming

See START OF OPERATION 2/1537-ASB 150 02 Uen.

Equipment

System Telephone

Following telephones of the Dialog 3000 series may be used for in combination with CCS Basic.

- DBC 211
- DBC 212
- DBC 213

Connection to the ASB 150 02

Following hardware is required for connection of the CCS Basic to the ASB 1500 02.

- V.24 cable to connect ASB 150 02 and the PC

For detailed information about the connection to the ASB 150 02, see document START OR OPERATION (2/1537-ASB 150 02 Uen).

For detailed information about the installation of the software, see Installation Guide.

Personal Computer

CCS Standard requires the following minimum configuration of personal computer:

- 100% IBM compatible
- ISA architecture
- Pentium 75Mhz processor (or better)
- 16 MB RAM
- Bus mouse
- one internal 3.5 inch disk drive
- 850 MB free hard disk space
- One standard serial port, configured as COM 1

- One parallel port for the adaptation unit and system printer
- SVGA graphics card with minimum 1 MB of memory and minimum resolution of 800x600
- 15 inch SVGA non-interlaced colour monitor
- MS-DOS 6.0 or higher and Windows 3.11 for Workgroups
  or
- Windows 95 operating system

Documentation

To supply the end-user with detailed information see also the user documentation for the CCS Standard:

User's Guide (available in Word-format on floppy disks)	EN/LZT BS 102 062/B
Installation Guide (for CCS Standard and CCS Basic)	EN/LZT BS 102 063/B
Quick Reference Guide	EN/LZT BS 102 064/B

FEATURE COMPARISON OF CCS Standard with CCS Basic

General

This chapter shall give an overview about the features supported by CCS Standard and by CCS Basic, to enable technicians to point out the differences.

1. MENU STRUCTURE

The menu structure is the same for both, CCS Standard and CCS Basic. Both applications have the same framework window.

2. USER TYPES AND USER PERMISSION

User types and user permission work in the same way for the Standard and for the Basic. There are two levels of users, the normal user and the system user. Any amount of normal users can be configured, but only one system user. The amount of access to information can be restricted and therefore is different for normal users.

3. REAL-TIME VIEWS

3.1 ACD GROUP REAL-TIME VIEW

This table displays detailed information about all ACD group real-time views.

Information displayed	CCS Standard	CCS Basic
Maximum Queue Size	yes	yes
Current Number of Calls in Queue	yes	yes
Longest Call in Queue	yes	yes
Expected Delay	yes	yes
Number of Active Agents	yes	yes
Calls Offered	yes	yes
calls answered	yes	yes
Service Level Percentage	yes	yes
Service Level Trend Graph	yes	yes
Agent Performance Trend Graph for average answer, average talk, average clerical time of the selected ACD Group	no	yes
Average Time to Answer	yes	yes
Average Talk Time	yes	yes
Average Clerical Times	yes	yes
Average Queue Time	yes	no
Available Agents	yes	no
Agents in ring	yes	no
Agents in clerical	yes	no
Occupied agents	yes	no
Average Wait to Answer	yes	no
Average Wait to Abandon	yes	no
Calls abandoned	yes	no
Calls overflowed out	yes	no
Calls Transferred in	yes	no
Calls Rejected	yes	no
Average Queue Length	yes	no
Calls Overflowed in	yes	no

Information displayed	CCS Standard	CCS Basic
Longest Wait Time	yes	no
Histograms for average queue, average ring, average clerical time, average call time, average wait, and average agent	yes	no

3.2 AGENT REAL TIME VIEW

This table displays detailed information about agent real time views. Agent real time views are not supported by the CCS Basic.

Information displayed	CCS Standard	CCS Basic
Name	yes	no
PIN Code	yes	no
State (including the colour)	yes	no
Time in a state	yes	no
Connected to (trunk or ext. number)	yes	no
Information on selected agent	yes	no
working on extension number	yes	no
Log on at Time	yes	no
Log on Time Duration	yes	no
Available Duration	yes	no
Active Duration	yes	no
Occupied Duration	yes	no

Information displayed	CCS Standard	CCS Basic
Current Call information on selected agent	yes	no
Real Time statistics on selected agent	yes	no

3.3 AGENT GROUP REAL TIME VIEW

Agent groups are only supported by the CCS Standard. They cannot be set up with the CCS Basic (Agent Groups are for example day shift, night shift, newly employed agents, etc.).

4. REPORT SYSTEM

Both systems use the Borland Data Base Engine and the Crystal Reports. All generated reports can be shown on the screen, or sent to any Windows compatible printer, respectively network printer and fax machine. All Reports can be exported to an extensive range of standard formats, e.g. Excel, CSV, Lotus 1.2.3, quattro pro, etc.

Report Types	CCS Standard	CCS Basic
Standard	yes	yes
Summary	yes	no
Period	yes	no
Scheduled reports	yes	no
Report macros (multiple reports that can be scheduled)	yes	no
ACD group reports	yes	yes
Agent reports	yes	yes
Call Code reports	yes	yes
Agent group reports	yes	no

Reports	CCS Standard			CCS Basic
Agent Reports	**Standard**	**Summary**	**Period**	
Agent ACD Activity	yes	yes	no	no
Agent ACD Queue Performance	yes	no	no	no
Agent Call Code Activity	yes	yes	no	yes
Agent Completed Call Details	yes	no	no	yes
Agent abandoned call	no	no	no	yes
Agent Log on activity	yes	no	no	no
Agent Performance	yes	no	no	no
Group Reports				
ACD Queue Abandoned Call	yes	yes	no	no
ACD Queue Agent Activity	yes	yes	no	no
ACD Queue Agent Performance	yes	no	no	no
ACD Queue Agent Log on activity	yes	no	no	no
ACD Queue Call Breakdown	yes	yes	no	no
ACD Queue Call Code Activity	yes	yes	no	no
ACD Queue Call Handling	yes	yes	no	no
ACD Queue Call Wait	yes	yes	no	no
ACD Queue Calls Answered	yes	yes	no	no
ACD Queue Short Calls	yes	yes	no	no
Agent ACD Queue Activity (by agent group)	yes	yes	no	no
Agent ACD Queue Performance (by agent group)	yes	no	no	no
Agent Call Code Activity (by Agent Group)	yes	yes	no	no
Agent Group ACD Queue Activity	yes	yes	no	no
Agent Group ACD queue Performance	yes	yes	no	no
Agent Performance (by Agent Group)	yes	no	no	no
Agent Log on Activity (by Agent Group)	yes	no	no	no
ACD Group Reports				
ACD Group Abandoned Call	yes	yes	yes	yes
ACD Group Agent Activity	yes	yes	no	no
ACD Group Agent Log on Activity	yes	no	no	no
ACD Group Agent Performance	yes	no	no	no
ACD Group Call Breakdown	yes	yes	yes	no
ACD Group Call Code Activity	yes	yes	no	no
ACD Group Call Handling	yes	yes	yes	no
ACD Group Call Wait	yes	yes	yes	no
ACD Group Calls Answered	yes	yes	yes	yes
ACD Group Short Calls	yes	yes	yes	no
ACD Group Trunk Utilisation	yes	no	no	no

5. WALLBOARD SUPPORT

The CCS Standard supports wall boards and has the necessary user interfaces for Wall Board messaging. The CCS Basic does not support Wallboards.

6. BASIC MANPOWER PLANNING TOOL

The CCS Standard has an integrated manpower planning tool that allows the user to calculate the number of agents needed according to average speed of answer, average talk time, average clerical, and total call volume per specified period. This integrated module uses standard statistics calculating tools (Erlang B and Erlang C). It also works in reverse and lets the user calculate for example average speed of answer of Service Levels from certain assumed staffing quantities. The CCS Basic does not support this Manpower Planning Tool.

7. OPERATION AND MAINTENANCE

Both software packages are provided with the basic configuration information from the ASB 150 02 automatically when the CCS is connected.

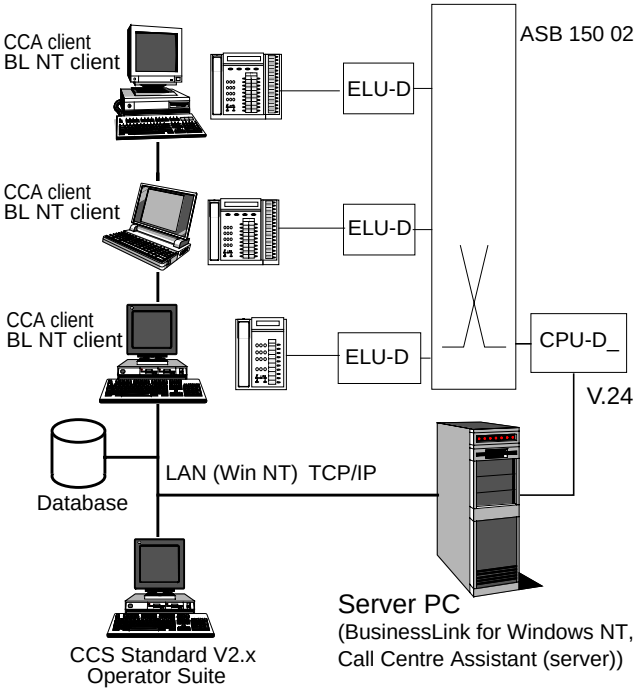
System Configuration parameters	CCS Standard	CCS Basic
Agent Groups	yes	no
ACD Group names	yes	yes
Agent Details	yes	yes
Agent PIN's	yes	yes
Wall Board Messages and schedules	yes	no
ACD Queue Thresholds & Alarms for : Service Level, Short Calls, Abandoned Calls	yes	yes
Setting of System Reset Time	yes	yes
Call Code Details	yes	yes

Operation and Maintenance Commands	CCS Standard	CCS Basic
Time to First Voice Answer	yes	yes
Time to Second Voice Answer	yes	yes
Type of Queue Messages (Expected Waiting Time or Queue Position)	yes	yes
Maximum Queue Size	yes	yes
Maximum Queue Size option (fixed or dynamic)	yes	yes
Time to Set Agent Passive	yes	yes
Maximum Clerical Time	yes	yes
Pin Code (required/ not required)	yes	yes
Call Code (required/ not required)	yes	yes
Other important O&M features		
System Security (passwords for different users)	yes	yes
System Configuration Print out/Export	yes	yes
System Log files	yes	yes
Exception Log	yes	yes
Diagnostic Log	yes	yes
System Log	yes	yes
Event Log	yes	yes

CALL CENTRE ASSISTANT (CCA)

General

Call Centre Assistant (CCA) is a client/server application providing advanced call management, call centre statistics, screen pop of customer data and abandoned queued calls lists to call centre agents and supervisors. CCA puts ACD and telephony functionality of supervisors and agents (users) onto the PC screen. It is intended for call centre agents and supervisors as well.



Use

Adding the CCA to the BusinessPhone call centre offering, fulfils the customer needs for improved call centre performance. By truly integrating the computer and the ACD functionality of the BusinessPhone, CCA provides full control of the agent's telephone from the PC. It provides the agent with the ability to perform all agent related activities, including logging on to ACD, marking themselves ready for ACD-groups, managing clerical time, entering call codes, monitoring other agents, sending messages and more.

CCA is positioned as a tool supporting the agent and the supervisor in their essential daily tasks in efficient sophisticated small to medium sized call centres.

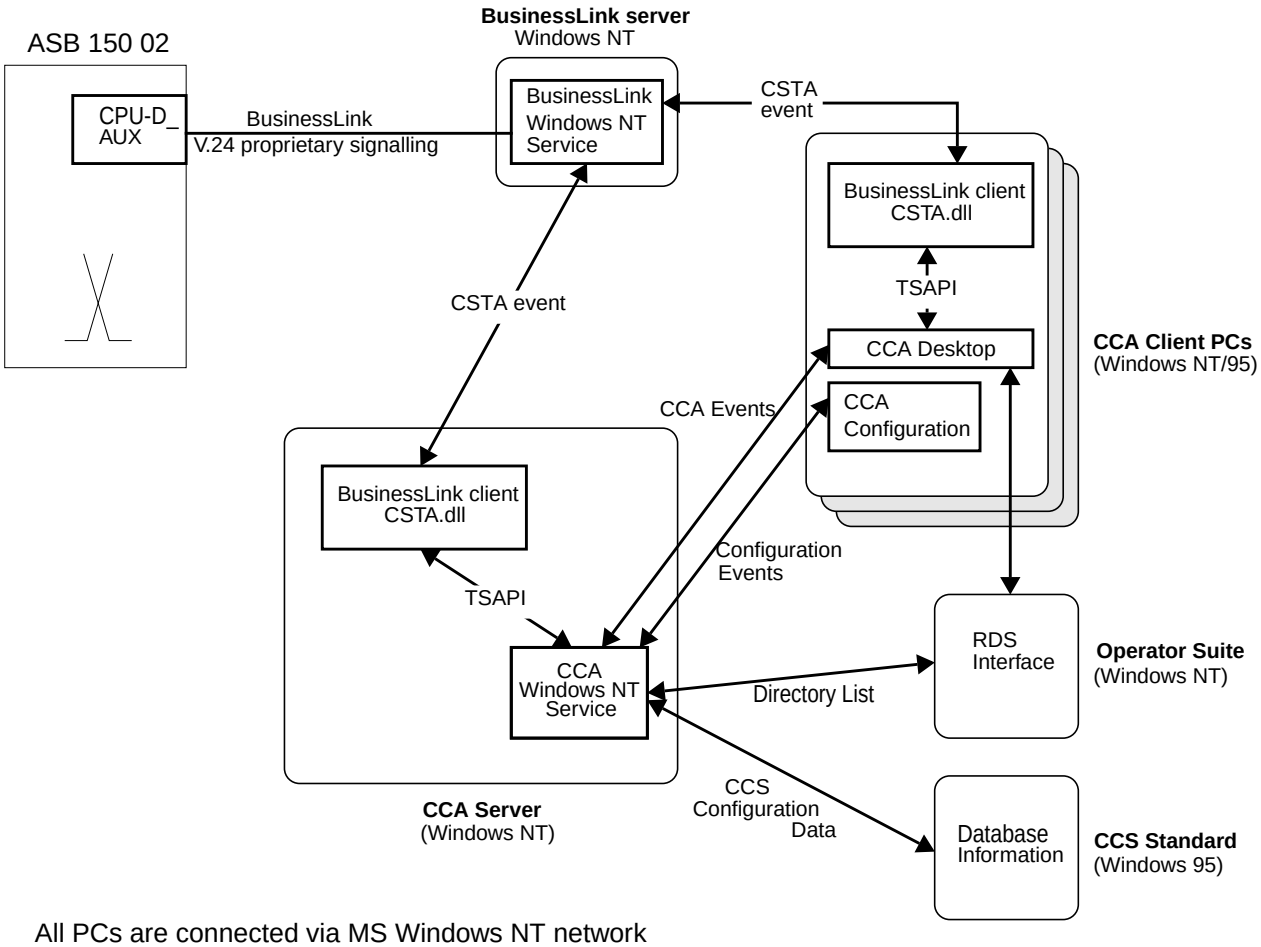
Operation

General

The CCA application is essentially a graphical user interface desktop application. CCA has a client/server architecture, where individual agent desktops communicate with a central server over a LAN or WAN. The agent desktops and the server require the BusinessPhone TSAPI link (BusinessLink for Windows NT) to provide call control, such as making, answering, transferring and conferencing calls, and ACD statistical information.

It provides configuration data by integration into the BusinessPhone Call Centre Supervisor Standard Version 2.x (CCS) product. The CCA also interfaces with the BusinessPhone Operator Suite (especially with the Directory Manager) to provide a corporate directory in addition to a personal directory which is always provided with the CCA. CCA operates under Microsoft Windows NT (Server/Client) and Microsoft Windows 95 (Client) as a Win 32 (32-bit) application.

The integration with BusinessPhone Operator Suite application and BusinessPhone Call Centre Supervisor application provides additional functionality. However, they are not required for the CCA to operate.



All PCs are connected via MS Windows NT network

Description of components:

BusinessLink :

The BusinessLink which resides in a Windows NT machine provides call control and enhanced ACD functionality between the CCA desktop application and BP250. All of the functions provided in CCA are accomplished via channels between BusinessLink and CCA desktop application/CCA service depending on the nature of the functions.

Ericsson TSAPI (32-bit Client DLL for Windows NT/ 95):

Individual agent/supervisor desktop applications will use TSAPI to communicate with BusinessLink in order to control the telephone device. Ericsson TSAPI is a TSAPI Client DLL running on Windows NT and Windows 95, which converts TSAPI into CSTA ASN.1 for 32-bit applications. The ASN.1 packets can then be directly sent to BusinessLink over TCP/IP.

This Ericsson TSAPI DLL will allow any TSAPI 32-bit application to work directly with BusinessLink.

CCA Database:

The CCA database contains the configuration information defined via CCA configuration application and agent activity information such as dialed number information.

The CCA database can be created in two ways. If a Microsoft SQL Server exists in the network to be used by Operator Suite., the CCA database will be created in the SQL Server. Otherwise, the CCA Database will be created using the MS Access Jet Engine, which means that the customer does not have to buy any database product.

CCS Server:

The CCS Server which manages ACD real-time statistics and resource management information, resides on a separate PC in the network. The CCA Server will directly access the CCS Server database for configuration data.

Operator Suite Database:

The Operator Suite database which contains the directory information managed by the Directory Manager, resides on a separate PC in the network. The Directory Manager database contains corporate directory information which is accessed from CCA desktop applications.

CCA service:

The CCA service which resides on the CCA Server machine (Windows NT) provides co-ordination between the individual CCA desktop applications, BusinessLink and BP250. It is a central point to access the CCA database. It also interfaces with the CCS database for configuration data. Refer to CCA Service section of this document for detailed information.

CCA Configuration:

CCA users can configure system parameters and CCA data via the CCA configuration application which can run on either the CCA server or client PC. Users can also define user types and users.

Refer to the configuration section of this document for detailed information.

CCA Desktop:

The CCA desktop application which resides on Windows NT and Windows 95, provides a user-friendly graphical interface to provide call control, enhanced ACD functionality and real time ACD statistics.

Structure of CCA application (desktop)

The features of CCA desktop application are divided into two general categories:

- **Call Control features (Call Window)** allows to control the desktop telephone via a computer interface, including making, answering, holding, conferencing and transferring calls.
- **Enhanced ACD functionality (Desktop Toolbar)** allows the agent/supervisor to access ACD features on the BusinessPhone via a computer interface, such as logging on/off, managing clerical time or call codes. Additionally, CCA provides ACD features currently not available with the BusinessPhone ACD system such as forcing the log off of agents, continuous monitoring of agents, desktop messaging, etc.

The Call Window

The Call Window allows to perform basic call processing functions and specific ACD features.

The Following functions are accessible via the Call Window:

- dial
- answer
- hang-up
- hold/off hold
- transfer
- conference
- private divert
- Help
- enter call codes
- stop clerical state
- get abandoned call from caller list

The Call Window offers important information about the call currently ongoing on the agent's/supervisor's telephone:

- Status (text and colour indication)
- Duration Time
- ACD-group
- Name (if available)
- Number (if available)
- Queue Time (time in queue of the calling party - ACD calls)
- Called Number (original dialled number)

All these functions can be performed by either using the keyboard function keys or the mouse.

The Desktop Toolbar

The Desktop Toolbar with command buttons will appear on the agent's/supervisor's desktop with the associated privilege level of the agent/supervisor. Each agent/supervisor can be assigned different privileges. The privileges are assigned through the CCA Configuration application (see CCA Configuration Tool in this document).

The example below shows the Desktop Toolbar of a supervisor with full functionality:

The buttons correspond to the following functionality:

- dial
- pause
- ACD log on and group membership
- force log off
- monitoring
- ACD-group day/night-switch (diversion)
- ACD statistics

- desktop messaging
- view abandoned callers list
- desktop menu

For an agent/supervisor having fewer privileges the Desktop Toolbar is limited. Below is an example of a minimum agent toolbar for a user with limited privileges:

Important features

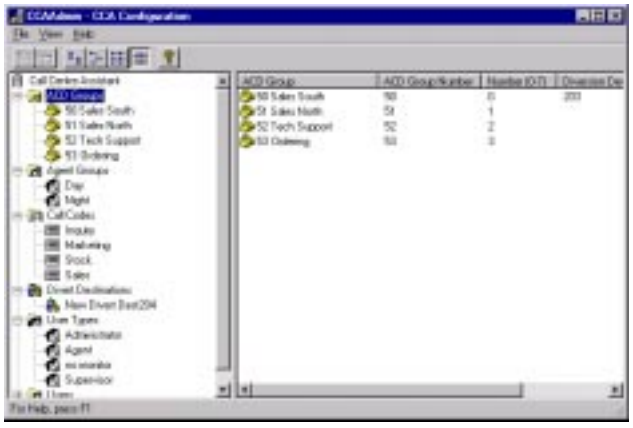
- Making calls
  CCA provides dialling capability via digit entry on the PC, directory dialling by using the CCA personal directory or the BusinessPhone Operator Suite corporate directory. The Search functionality of CCA works transparently with these two directories.
- Receiving calls
  The Call Window is popping up on to the screen, if the user wants this option. The user will also be alerted by a red colour in the status field.
- Agent ACD log on/log off
  Provides basic ACD log on/log off and ACD Pause capability. Additionaly, privileged users may modify their ACD configuration, or that of another agent, to better respond to traffic flows and to change shifts.
- Help/Intrude
  Allows users to request assistance from a supervisor for a particular call and to send an accompanying message with the request. If the request is accepted, the supervisor is automatically placing a call to the agent requiring assistance. The user may select from a list the supervisor or super user (can be defined in the system) to be contacted in case of needed help.
- Continuous monitoring
  Allows a supervisor or privileged users to monitor user's conversation over successive calls or one single call. If the designated agent receives a call, the supervisor is automatically brought into the call via silent intrusion by CCA.
- Clerical time
  Visual indicator of clerical time, manual cancelling of clerical time
- Force log off/Pause
  Allows a privileged supervisor to change the ACD status of another user or the entire group of users
- Call code entry
  Allows users to enter one or more call codes from a pre-defined list for in- and outbound calls. Call codes are sent to the CCS (if existing) and are validated by CCS
- Consultation Call Information
  If an agent is consulted by another agent with an ACD call on hold, the consulted agent can view details about the ACD call.
- Desktop messaging
  Allows privileged users to send a text message to other users or groups of users. The user can select from a list of logged on agents and user groups.
- DTMF support
  CCA supports sending of DTMF tones.
- Statistics
  CCA enables users to view real-time statistics.
- Call-back of abandoned queued calls
  The abandoned queued calls are presented to the users as a list of all abandoned queued calls. The user has a button to execute, schedule or delete a call. The user has access to the Dial Directory or the Dial Pad. Search functionality is supported.
  The entries are checked with the log file to search for identical caller numbers to display the number of times a specific call has been abandoned.
  It is also configurable whether the abandoned queued calls shall be presented to the user as a list or directly as pop-up dialog.
- DDE: Screen Pop
  CCA provides a DDE interface (Dynamic Data Exchange), which allows CCA to trigger other applications to perform actions on CCA's behalf, and allows other DDE-enabled applications to instruct CCA to perform actions on their behalf.

  If you have been assigned with the Configure DDE privilege, the Configure DDE command,

which opens the Event Manager dialog box from which you can configure the DDE interface, will be available on the Desktop menu.

CCA Configuration Tool

This tool is used by the system administrator for the administration of the CCA as well as the maintenance of data defined by the Call Centre Supervisor (CCS). CCA Configuration is used to configure and view the properties of CCA system as well as individual objects such as ACD-groups, agent groups, call codes, divert destinations, users and user types.



Integration of BusinessPhone Call Centre Supervisor Standard Version 2.x

When interfaced with BusinessPhone Call Centre Supervisor Standard Version 2.x (CCS), data (such as ACD-groups, agent and call code information, agent greetings and divert destinations) can be imported from CCS, thus minimizing the efforts to configure CCA data.

Integration of BusinessPhone Operator Suite

When interfaced with BusinessPhone Operator Suite (Directory Manager), the call control aspect of CCA is enhanced by allowing access to the corporate directory provided by BusinessPhone Operator Suite. Through an easy to use Dialogue, the user can search and select a telephone number from the directory where internal as well as external telephone numbers are available.

Capacity

Calls per hour	about 1700
Servers	1
Users/Agents	configurable
ACD Groups	8
User Types	configurable
Max. Agents active	40
Trunk lines	60
Agent Pins	0-999
Call Codes	0-99999
Databases	unlimited*

* depends on the available disks storage

Limitations

none.

Programming

See START OF OPERATION (2/1537-ASB 150 02 Uen).

Equipment

ASB 150 02 system software R10 or higher and one free V.24 port on the CPU-D_4 board are required.

Protection Unit

An adaptation unit (also known as WIBU-dongle) is required for every software release. This determines the number of agents supported by the system according to the structure of the product. For a detailed description of the adaptation unit handling please refere to Technical Guide of CAA. There are located very important notes concerning protection philosophy of CCA.

System Telephone

The following telephones of the Dialog 3000 series may be used in combination with CCA:

- DBC 211
- DBC 212
- DBC 213 (rocommended - see Note)
- Note: In case of network faults/problems it is possible with the DBC 231 telephone to handle ACD activities without having access to CCA.

Connection to the ASB 150 02

The following hardware is required for connection of the CCA to the ASB 1500 02.

- V.24 cable to connect ASB 150 02 and the Server PC

For detailed information about the connection to the ASB 150 02, see document START OF OPERATION (2/1537-ASB 150 02 Uen).

For detailed information about the installation of the software, see CCA Technical Guide.

Hardware Requirements

CCA Server:

Pentium 200 MHz Windows NT compatible PC
32 MB RAM
Network Interface Card
100 MB of free hard-disk storage

CCA User's Desktop:

Pentium 200 MHz Windows NT or Windows 95 compatible PC
Monitor with 800 x 600 resolution
32 MB RAM
50 MB of free hard disk space
Network Interface Card

Communication:

TCP/IP protocol
NetBEUI protocol

Note: These are only minimum hardware requirements for CCA application. If other applications are also running on the same PC, a higher grade machine will be required.

Software Requirements

CCA Server:

Windows NT version 4.0
BusinessPhone BusinessLink 32-bit Client DLL

CCA User's Desktop:

Windows NT version 4.0 or Windows 95
BusinessPhone BusinessLink 32-bit Client DLL

Documentation

The documentation will be delivered on the product CD-ROM in Adobe PDF (printable document format) in two versions (designed for screen viewing and designed for printing).

- BusinessPhone Call Centre Assistant - User's Guide
- BusinessPhone Call Centre Assistant - Technical Guide
- BusinessPhone Call Centre Assistant - Quick Reference Guide

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SEA/EBBMP Pfleger H.	SEA/EBBX/E	110/155 34-ASB 150 02 Uen	
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SEA/EBBMP		99-07-15 / C	ASB 150 02
		Database reference	
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ALARM FUNCTION

Definition

The alarm function includes the possibility to send an alarm initiated by a telephone or an external alarm device to a programmed alarm centre.

The alarm may be initiated by an external alarm device connected to an extension.

When activated, the alarm is sent to all extensions having a programmed alarm key.

An alarm can only be reset from the place where it originates. The alarm centre cannot reset the alarm device.

There is a distinction between an unacknowledged and an acknowledged alarm.

Unacknowledged alarm

This alarm has not been read and acknowledged by the alarm centre.

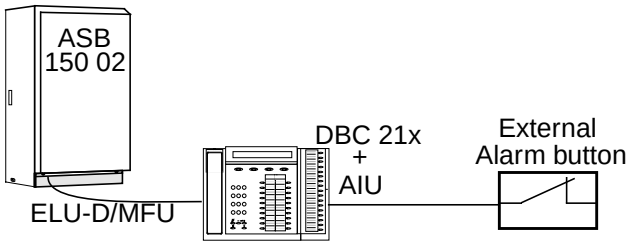
Acknowledged alarm

This alarm has been read and acknowledged by the alarm centre but the alarm device has not yet been reset.

Use

The alarm function can be used for different types of alarms, for instance as a security alarm in hotel guest rooms or in banks for the cashier.

Operation



An Alarm Interface Unit (AIU) is necessary as interface with an external alarm button.
The AIU is a special option unit that has to be mounted beneath the digital telephone.
If the switch is open or the telephone is disconnected an alarm will be initiated in the main alarm center or/ and in one of the to 8 different alarm center groups.

Alarm indication

An alarm is indicated by a fast flashing lamp of a programmable key on the telephone at the alarm centre. The telephone rings in accordance with the programmed ring type.

Read out of the alarm

The receiver at the alarm centre presses the key next to the alarm lamp.
The ringing is discontinued.

The display shows:

EXECUTIVE telephone

```
10 Jul 14:40   +15°
ALARM FROM       203          TIME 14:30
```

STANDARD telephone

```
ALARM FROM        203
TIME             14:30
```

If there are no more alarms, the lamp will change to steady light.
If there exists at least one more alarm, the fast flashing will continue.

The user can press the alarm key again and the next alarm will be presented.

If no more unacknowledged alarms exist it is possible to step through the acknowledged alarms that have not yet been reset.

If a new alarm arrives, while another alarm is being read, only a muted ring signal will be heard.

No unacknowledged alarms exist

If there are no unacknowledged alarms when the key is depressed, the display will show:

EXECUTIVE telephone

```
10 Jul 14:40   +15°
ALARM FROM      203  WAS READ AT 14:40
```

STANDARD telephone

```
ALARM FROM       203
WAS READ AT    14:30
```

No alarms exist

If the key is depressed when there are no alarms and the lamp is extinguished, the display will show:

EXECUTIVE telephone

```
10 Jul 14:40   +15°
NO ALARM IN QUEUE
```

STANDARD telephone

```
10 Jul 14:40   +15°
NO ALARM IN QUEUE
```

The alarm is restored

If the alarm device is restored during the time the alarm centre is reading the alarm, the display will change to:

EXECUTIVE telephone

```
10 Jul 14:40   +15°
ALARM FROM      203  NOW RESTORED
```

STANDARD telephone

```
ALARM FROM       203
NOW RESTORED
```

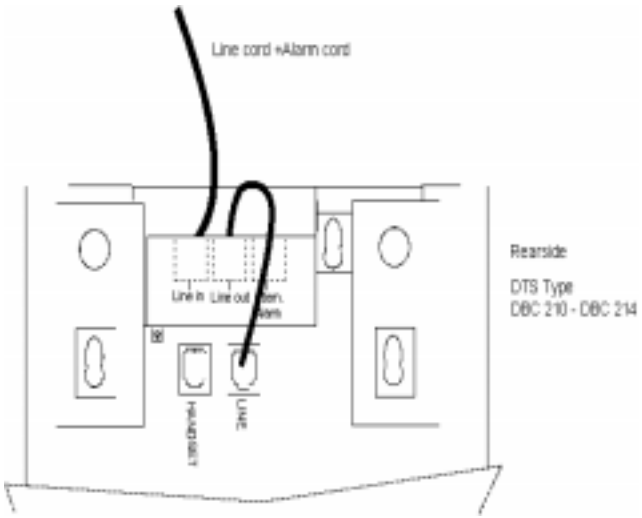
To use the alarm functionality on the DBC 21x telephones, an Alarm Interface Unit (AIU) is necessary as interface with an external alarm button. The system instrument interface ELU-D/MFU is able to handle calls and alarm button signals simultaneous.

Disconnecting a telephone, an Alarm is initiated !

2 different solutions are available:

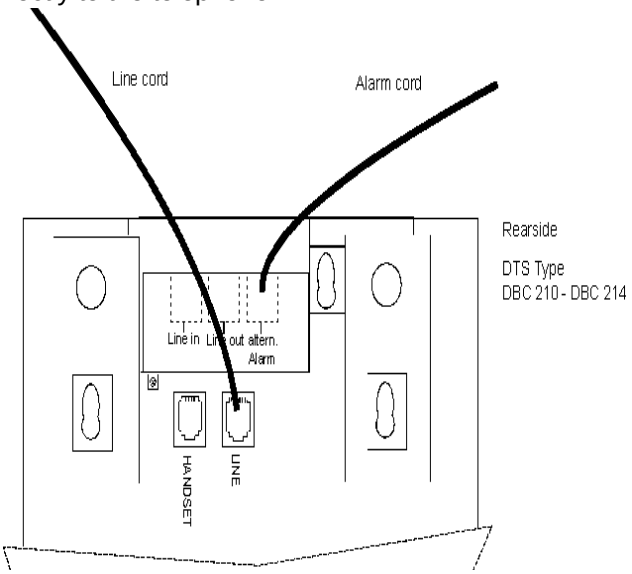
Solution 1

If the Alarm button IS NOT located next to the telephone (e.g. in the bathroom), the 2 unused lines of the 4 wire terminal line cord are used for the loop to the Alarm button.



Solution 2

If the Alarm button IS located next to the telephone (e.g. in hospitals next to the bed), it is possible to connect the Alarm button with a separate cabling directly to the telephone.



Reset of the actual alarm

The reset of the active alarm is only possible by dialling *54# on the telephone, from which the alarm has been activated.

When the alarm has been deactivated by the procedure, the indication in the alarm centre is automatically removed.

A special alarm button shall be used, which remains open when one time pressed. It is also necessary that this button is restored otherwise the alarm automatically pops up again after 10 seconds.

Capacity

Any digital extension can be used as an alarm device and any digital extension having a display telephone can be used as an alarm centre.

The alarm functionality is applicable in hotel environments in conjunction with digital guest room telephones as well as in the normal business application.

It is possible to define up to 8 different Alarm groups with different alarm centres.

In case of system restart the active alarms are NOT lost. After restart all alarms that have not been cleared up to that moment will be indicated again. Alarms appearing during restart cannot be handled.

Limitations

The number of active alarms is limited to 20 per group. All further alarms causes appropriate warning messages.

It is not possible to use the alarm function on following telephones:
Analogue telephones, DBC 201, DBC 202, DBC 203, DBC 199, DBC 6xx and DBC 75x.

Programming

0101
Facility category (A-category)

The ability to send or receive alarms depends on the categorisation of the extensions.

Extension positions for reading and sending alarms shall preferably be given separate facility COS.

```
10 Jul 14:40   +15°
FACILITY COS          0101  xxxx      zz
 backward  forward     c/i      return
```

xxxx Enter extension´s directory number
zz Enter facility class of service (00-15)

3073
Alarm extension

To be set to YES for the facility COS where the alarm devices are located.

```
10 Jul 14:40   +15°
SEND SOS ALARM ?      3073   xx        z
 backward  forward     c/i      return
```

xx Enter facility category (00 - 15)

z Enter relevant function.
N = Not allowed to send alarm (default data)

Y = Allowed to send alarm.

3074
Read alarm

This command has to be set to YES for the Alarm center telephone. To be set to YES for the facility COS where the alarm centre is located.

```
10 Jul 14:40   +15°
READ SOS ALARM ?      3074   xx        z
 backward  forward     c/i      return
```

xx Enter facility category (01 - 15)

z Enter relevant function.
N = Not allowed to read alarm (default data)

Y = Allowed to read alarm.

5633
Assign alarm groups

This directory number is used as supervision number for Alarm Groups. If an alarm has been activated the programmed alarm key flashes.

default value: EMPTY

0174
Alarm group

The command is used to assign an extension to an alarm group.

Valid alarm group numbers: 0 - 7

Default alarm group number: 0

Programmable key

0301
Function of programmable key

```
10 Jul 14:40   +15°
FUNCTION OF KEY       0301 xxxx yy    zz
 backward  forward     c/i      return
```

xxxx	Enter directory number for the extension
yy	Enter relevant key
zz	Enter selected function = 13
	Step to command 0302

0302
Associated number

```
10 Jul 14:40   +15°
ASSOCIATED NUMBER     0302 xxxx yy  zzzz
 backward  forward     c/i      return
```

xxxx	Enter the **group number** defined in command 5633 or function code ***79#** to supervise ALL different alarm groups.

0303
Ringing on incoming call

```
10 Jul 14:40   +15°
RINGING ALTERNATIVE   0303 xxxx yy     z
 backward  forward     c/i      return
```

z	Enter required type of ring signal (0-5)

Equipment

A digital telephone DBC 210, DBC 211, DBC 212, DBC 213 or DBC 214 is necessary.

To use the alarm functionality via the system telephones DBC 21x, the optional Alarm Interface Unit (AIU) is necessary as interface with an external alarm button.
The external alarm button has to be closed in idle state.

Alarm center

The alarm centre must be equipped with a display telephone. To read out the alarm a Standard, Executive telephone or an Operator's console is required.

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SEA/EBBMP		99-07-15 / C	ASB 150 02
		Database reference	
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ANALOGUE TELEPHONE

Definition

Analogue telephone denotes the connection of a standard telephone with rotary dial or Dual Tone Multi Frequency (DTMF) signalling.
The concept also embraces other equipment that from a signalling point of view functions like an analogue telephone.

Use

Analogue connection can be significant for the connection of special units such as:

- Telephone answering machine
- Telefax
- Modem
- Entryphone
- Telephones for special environments

Operation

See under relevant facility description.

Ericsson Analogue telephone

Analogue Basic Telephone, Dialog 3105

- Switchable DTMF signalling/decadic pulsing
- Last number redial
- Temporary switch to DTMF signalling
- Tone ringer & Volume control
- Switchable R function, earth/time break
- Mute button for handset microphone
- 4-hour memory retention without batteries
- Wallmounting possible

1 Mute
To switch the microphone on or off.

2 Tone
Temporary change to tone dialling

3 Last number redial / Pause key
a.) Redials last number dialled
b.) Inserts a pause if you have to wait for dial tone.

4 R-key
Used e.g to make an inquiry, to transfer a call or to establish a conference

5 Program quick dial number
Stores the most frequently called number. (If the phone is unplugged, the stored number will be maintained for about 4 hours)

6 Handset volume

7 Ringing signal volume

8 Ringing signal character

9 Tone / Pulse dialling

10 Flash / Earth mode

11 Loudspeaker

12 Handset with hearing aid function

Analogue Medium Telephone, Dialog 3145

- Switchable DTMF signalling/decadic pulsing
- Last number redial
- Temporary switch to DTMF signalling
- Tone ringer
- Switchable R function, earth/time break
- Volume control
- Mute button for handset microphone
- 4-hour memory retention without batteries
- Wallmounting possible
- 9 dial-by-name buttons
- Program button
- Monitoring speaking
- Line and speaker on/off indication with LED
- Message waiting LED

1 Mute
To switch the microphone on or off.

2 Tone
Temporary change to tone dialling

3 Last number redial / Pause key
a.) Redial last number dialled
b.) Insert a pause if you have to wait for dial tone.

4 R-key
Used e.g to make an inquiry, to transfer a call or to establish a conference

5 Loudspeaker on/off

6 Program
Stores the most frequently called numbers. (If the phone is unplugged, the stored number will be maintained for about 4 hours)

7 Programmable keys
Nine keys for storing the most frequently called numbers. (If the phone is unplugged, the stored numbers will be maintained for about 4 hours)

8 Message waiting LED

9 Handset volume

10 Ringing signal volume

11 Speaker volume

12 Tone / Pulse dialling

13 Flash / Earth mode

14 Ringing signal character

15 Loudspeaker

16 Handset with hearing aid function

Capacity

The number of analogue connections is limited by the number of connected ELU-A boards and the maximum extension capacity (200).
Each ELU-A board offers 16 connection options.
Each ELU-A board has four DTMF-receivers and one ring generator.

Limitations

In certain cases units such as modems and telephone answering machines require ring signals of a certain duration. Such extension positions can be programmed so that only a single ring signal is provided, irrespective of whether the call is external or internal.

For analogue extensions it is not possible to enable ringing for all individuals on the same board at the same time. An analogue extension board (ELU-A) can provide the ringing voltage only for one instrument at the same time. The request for all other instruments will be queued. In that case the ringing signal will be multiplexed over the queued instruments. The repetition rate of the ringing signal will go down depending on the number of parallel ringing instruments located on the same board.

Programming

0122
Long ring bursts

With this command it can be specified that the analogue extension position shall always supply long ring signals (bursts), e.g. for modems.

NOTE: The command also affects ring signals to digital extension positions

```
10 Jul 14:40   +15°
LONG RING BURSTS ?    0122  xxxx       z
 backward  forward     c/i      return
```

xxxx — Enter the extension's directory number of the extension

z — Enter the relevant function.
N = Normal ringing (default data).
Y = Long ring bursts only.

0124
Call waiting tone ?

Busy extensions that are connected via the ELU-A board can hear call waiting tone when a new call is camped on.

```
10 Jul 14:40   +15°
CALL WAITING TONE ? C 0124  xxxx       z
 backward  forward     c/i      return
```

xxxx — Enter the directory number of the extension.

z — Enter the relevant function.
N = No call waiting tone (default data).
Y = Call waiting tone

The following commands are only accessable via RASC:

0143
Line break time

It is possible to define a break of the loop on analogue lines.

2007
Type of rotary dial type

The analogue input can be adapted to different types of rotary dials.

value	digit									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**0**
0	1	2	3	4	5	6	7	8	9	10
1	2	3	4	5	6	7	8	9	10	1
2	9	8	7	6	5	4	3	2	1	10
3	10	9	8	7	6	5	4	3	2	1

2105
Shortest break time for release

The shortest interruption time that can be interpreted as disconnection.

valid values: 100 ms - 990 ms

2106
Shortest break time for register access

This command states the shortest break that must always be interpreted as a register access signal for analogue extensions. The time is stated in units of 10 ms.

valid values: 40 ms - 990 ms

Transmission Characteristics:

2025
Nominal impedance analog extension

The nominal impedance of the ELU-A board can vary from market to market. The board therefore has been designed with programmable impedance.

Value	Nominal impedance
0	2 x 400 ohm (default value)
1	2 x 850 ohm
2-225	not used

2026
Attenuation for DTMF-signals

The attenuation level for DTMF-reception can vary from market to market. the ELU-A board therefore has been designed with programmable attenuation level.

Value	Attenuation level
0	high (default value)
1	low
2-225	not used

0139
Filter coefficient

Input impedance and balance impedance in the analogue interface (ELU-A) are defined by a number of filter coefficients that are loaded in DSLAC. The filter coefficients are stored in the form of a table.

The impedance is chosen as
Rs (ohm) + Rp (ohm) // Cp (nf).

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		99-07-15	C

0140
Transmission group

This command is used to state in which transmission group of the transmission matrix the extension should be included. The transmission matrix is defined in command 27xx and is used for adaptation of the relative levels depending on which type of interface the extension is connected to.

0141
Relative sending level

This command is used to state the relative transmission level (Lo) in the analogue interface to ELU-A.

valid data: -12dBr to + 6dBr (steps: 0,1 dBr)

default data: - 3 dBr

0142
Relative receiving level

This command is used to state the relative reception level (Li) in the analogue interface to ELU-A.

valid data: -12dBr to + 6dBr (steps: 0,1 dBr)

default data: - 3 dBr

Equipment

Requires

ELU-A board

and / or

MFU board

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
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SEA/TB/MP		97-10-31 / B	ASB 150 02
		Database reference	
		112.fm	

ANSWER POSITION(S) FOR TRUNKS

Definition

Trunks can be assigned individual answering positions to which incoming calls are directed.

Use

Answering positions are used when:

- Incoming external traffic shall be answered by OPERATOR or other answering position
- Incoming external traffic shall be distributed so that different persons within the organisation answer certain selected trunks
- It is desired to create a private trunk line for a selected extension

Operation

All telephones

An incoming call to a programmed answering position is always presented on **Line 1** or **Line 2**.

The associated lamp flashes rapidly and external ring signal is heard.

Display information

Call to normal answering position:

EXECUTIVE telephone

```
10 Jul 14:40   +15°
EXTERNAL                    703  CALLING
```

STANDARD telephone

```
10 Jul 14:40   +15°
EXTERNAL     203  C
```

On a diverted call to alternative answering position, the display shows:

EXECUTIVE telephone

```
JOHNSON ANDREW              205
EXTERNAL                    703  CALLING
```

STANDARD telephone

```
JOHNSON A    205
EXTERNAL     203  C
```

Capacity

Each trunk can be assigned four different answering positions:

- Answering position for day-switched PBX
- Alternative answering position for day-switched PBX.
  Is called when normal answering position does not answer call or is busy (programmable).
  Is also programmed as reroute position for direct indialling
- Answering position for night-switched PBX
- Alternative answering position for night-switched PBX.
  Has same function as alternative answering position daytime

Limitations

If the trunk has no programmed answering position an incoming call will be signalled only on those external line keys that have been programmed for the trunk.

If the answering position is busy, the call can be camped on or diverted to the alternative answering position.

Programming

1101 - 1104
Programming of answering positions

Each individual trunk can be programmed for four different answering positions.

An answering position can be a/an:

- Extension number
- Group - (PBX) hunting number
- ACD number
- Fictive number
- Voice answer number
- OPERATOR queue

On initiation of the system all trunks are automatically assigned extension 200 as both standard and alternative answering position

```
10 Jul 14:40   +15°
ANSWERING POS.DAY     1101 xxxx     zzzz
 backward  forward     c/i      return
```

xxxx	Enter trunk's directory number
zzzz	Enter directory number of relevant answering position

Repeat the above procedure for commands 1102 - 1104.

Following commands are only accessable via RASC:

1009
Rero on answ pos barred ?

Each trunk can be programmed so that diversion (re-routing) to an alternative answer position can take place if the ordinary answer position is barred.

1010
Rero on answ pos blocked ?

Each trunk can be programmed so that diversion (re-routing) to an alternative answer position can take place if the ordinary answer position is blocked.

1011
Rero on answ pos vacant ?

Each trunk can be programmed so that diversion (rerouting) to an alternative answer position can take place if the ordinary answer position does not answer.

1012
Rero on answ pos busy ?

Each trunk can be programmed so that diversion (rerouting) to an alternative answer position can take place if the ordinary answer position is busy.

1016
Reroute on no answer ?

The command is used for direct in-dialing and private trunks for rerouting of incoming calls to the rerouting position if the destination required does not answer.

If "No" is programmed ringing will continue at the selected extension. For rerouting to take place it is necessary the rerouting position has been programmed, see commands 1103 and 1104.

1017
Rerouting on incomplete number from superior exchange

The command is used for direct in-dialing and private trunks for rerouting incoming calls to the rerouting position, if an inadequate number of digits has been received from a superior exchange.

For rerouting to take place it is necessary that the rerouting position has been programmed, see commands 1103 and 1104.

Equipment

None.

AUTHORISATION CODE

Definition

Authorisation code denotes a personal code that can be used to raise or reduce an extension user's categorisation level.

Use

Every extension user can be assigned an authorisation code.

An authorisation code can be used in several different cases.

Initiating calls from a blocked extension

For using own categories from another extension telephone.

For example if one is at an extension that is blocked for outgoing traffic.

By first keying one's authorisation code one can utilise this extension as if it were one's own extension.

Blocking own extension

For blocking one's own extension telephone so that it cannot be used without authorisation for long distance calls.

When, for example, an extension user leaves the office for the day, he/she can prevent other persons from using the telephone by keying in the authorisation code.

Cancelling temporary blocking

Used for cancelling temporary blocking, for example when the PBX is switched for night service.

If, for example, someone works overtime and all the extensions in the PBX are automatically blocked during night service, it is possible to make the same types of outgoing calls as during day service by using one's authorisation code.

Operation

All telephones

It is always possible for an extension user to use the authorisation code.

To block one's own extension

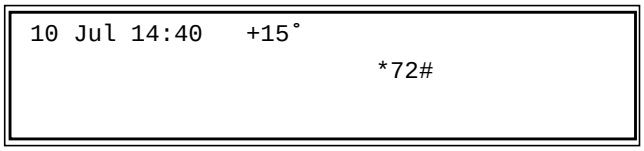
When extension users leave their telephones they may wish to block it against unauthorized use.

Adopt the following procedure:

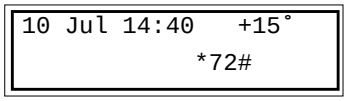
*** 72 #**

A telephone with display shows:

EXECUTIVE telephone



STANDARD telephone



A verification tone is heard for confirmation.

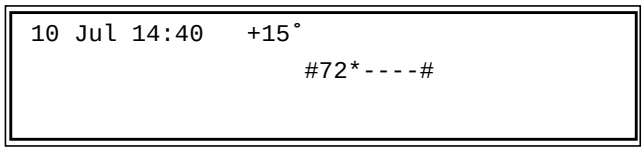
To cancel blocking of one's own extension telephone

To cancel an ongoing blocking, proceed as follows:

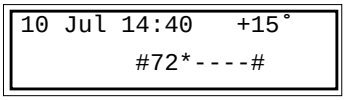
 # 72 * Code #

A telephone with display shows:

EXECUTIVE telephone



STANDARD telephone



A verification tone is heard for confirmation and the display goes blank.

Temporary cancellation of night blocking

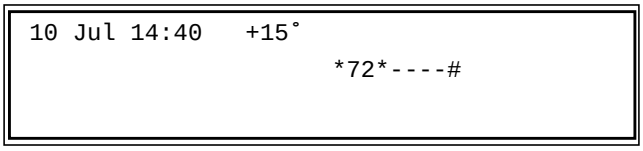
An extension user can temporarily raise the category by keying in the authorisation code, when the system has lowered the category for outgoing calls during night service.

Procedure:

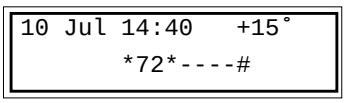
*** 72 *** Code #

A telephone with display shows:

EXECUTIVE telephone



STANDARD telephone



Dial tone is heard for confirmation and the display goes blank.

The user can now make the external call.

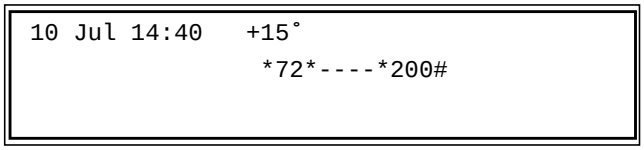
To make outgoing external calls from a blocked extension

If one wishes to initiate one external call from an extension that is blocked, it is possible to bypass this blocking temporarily by keying in one's authorisation code.

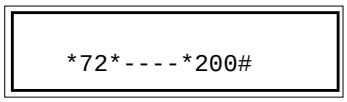
Procedure:

*** 72 *** Code ***** Own No. #

The display shows:



STANDARD telephone



The dial tone is heard for confirmation and the display goes blank.

The user can now dial the external number.

To alter one's authorisation code

When an extension user is assigned an authorisation code, it is set automatically to 0000.

This code can be altered by the owner to another 4-digit code at any time.

Concerning DISA WITH PASSWORD CONTROL (document 164/155 34-ASB 150 02 Uen), it is necessary to change the default authorisation code to a user defined code. DISA neither works with the default nor with the user defined authorisation code with the value 0000.

Procedure:

 # * 72 * Present code ***** New code #

A telephone with display shows the new code as a verification.

EXECUTIVE telephone

```
10 Jul 14:40   +15°
               #*72*----*1234#
```

STANDARD telephone

```
10 Jul 14:40   +15°
 #*72*----*1234#
```

Verification tone is heard for confirmation.

Limitations

When the category level has been raised, it will remain at the higher level until all calls via this extension have been completed.

The facility can also be utilised for inquiry calls.

The function cannot be utilised from analogue rotary dial telephones.

Programming

0117
Authorisation code?

Each extension user who is to utilise an authorisation code shall be assigned a code.

The assigned authorisation code is always 0000. This code can then be altered by the user

```
10 Jul 14:40   +15°
AUTHORITY CODE ?      0117 XXXX        Z
 backward  forward     c/i      return
```

xxxx	Enter extension's directory number
z	Select relevant function. Y = Extension has been assigned authorisation code. N = Extension lacks authorisation code (Default value)

2019-2022
Facility categories for authority code

On activation of authorisation code the extension is assigned other preprogrammed categories (classes of service) that are determined via commands 2019-2022.

The table lists the corresponding commands when the authorisation code is not activated.

Category	not activated	activated
facility category	0101	2019
TCD, day	0103	2020
TCD, night	0104	2021
Abbreviated number category	0105	2022

Equipment

None.

AUTOMATED ATTENDANT

Definition

The Automated Attendant (AA) function makes it possible for **internal** and **external** callers to choose between different options offered by selections voice menus.

With his choice the caller sends digits tones to the AA function, which sets up the new connection. This new connection can be a directory number of the system or another voice menu. AA feature supervises with a two-steps logic the response time of callers and the validity of his choices. In case of time-out or if the choise is invalid again, the caller will be automatically routed to a predefined reroute directory number (e.g. operator).

If the caller feels familiar with AA procedure, he can dial all the digits required at once, without having to wait for voice announcements. In case of wrong choices or time-out, he will be switched back to voice prompts.

Use

The Automated Attendant function replaces to some extend the activity of the operator. By using this feature it is not necessary to employ one specific person for handling the calls.

AA can be used as alternative answering/reroute position for Operator, Trunks, ACD queue.

On system extensions it is possible to activate DIVERSION or FOLLOW ME to a Automated Attendant.

Operation

The Automated Attendant function is structured as a network of single AAs each of them based in Selections Voice Menus.

The normal sequence of work of this feature starts after playing the announcement. Then AA function waits any response from the caller, checks the response and takes action based on it, offering another voice menu or a direct connection. It checks also the response time of the caller.

After transfering the call to the destination, AA goes free and is ready to analyse the next request.

From the caller's point of view, he receives voice instructions structured in voice menus. The caller will hear a voice menu informing him of all possible options he can choose in corresponding selections list. So, in general, voice instructions lead him step by step to the desired directory number.

Caller's response consists in sending digits by dialling the desired option's number, and the corresponding directory number will be called. This directory number can lead the caller to another AA associated from its side with corresponding selections list and voice menus, or to a system's extension
(see *Example 1 and 2*).

The caller can dial all digits at once if he knows the procedure. In this case voice prompts will not be played. If wrong inputs have been entered (e.g. wrong digit, or a digit is missing in string or the timebreak between digits is longer than register time-out interval), then the caller will be switched back into voice prompts. All the rest of the string digits will be ignored.

Each AA has its own voice menus/ announcements and selections list. Selections list contains:

- field of commands to be settled in order to choose desired function
- field of related information or comments
- field of directory numbers strictly related to commands' field. These programmable directory numbers can be:
  - identification addresses of different voice announcements
  - directory numbers of physical extensions in the system
  - fictive directory numbers
  - ACD groups or PBX groups
  - directory numbers of other AA-s
  - DISA directory number
  - common abbreviated numbers

- common mail box directory numbers or individual mail box directory numbers.

If the customer wants to access the AA procedure always from the top-level (in case of different AA combinations), be careful to start the directory number of different lower AA-levels with D, * or # in order to obtain a non directly dialable directory number. This makes impossible to start AA's procedure from a lower level. That's the reason why internal user's telephone set display shows just the name of first AA (e.g. default name "top level").

EXECUTIVE Telephone

```
10 Jul 14:40   +15°
Top level        xxxx                SPEECH
```

STANDARD Telephone

```
10 Jul 14:40   +15°
Top level    xxxx   S
```

xxxx directory number of the called AA.

The following is an example of a Selections list:

Automated Attendant - Selections List

COMMAND	COMMENTS	ENTRIES
8701	General-anno. reference	01
8702	Error-anno. reference	03
8703	Digit 0 related dir. nr.	200
8704	Digit 1 related dir. nr.	#810
8705	Digit 2 related dir. nr.	202
8706	Digit 3 related dir. nr.	205
8707	Digit 4 related dir. nr.	206
8708	Digit 5 related dir. nr.	-
8709	Digit 6 related dir. nr.	-
8710	Digit 7 related dir. nr.	-
8711	Digit 8 related dir. nr.	-
8712	Digit 9 related dir. nr.	200
8713	AA error reroute position	9
8714	Waiting for full dir. nr.	N

It is possible to program (see command 8714 in selections list) whether the procedure is going to wait for a complete extension's directory number (it can be also DISA or another AA directory number) or only for a single-digit directory number (*see Example 2*).

If the selected directory number of the selections list is busy, does not answer, is blocked, is vacant etc. in other words, is not available, the external caller will be rerouted to the default AA-exit position; while the internal caller will be automatically disconnected.

If the selected directory number of the selections list is a DISA - directory number, the external caller can use the DISA feature in the normal way, while the internal caller will be automatically disconnected.

Each selections list has an exit position for error cases (e.g. time-out, wrong entries etc).

As exit position can be used: directory numbers of physical extensions in the system, fictive directory numbers, ACD groups, PBX groups etc.

NOTE: Being inside Automatic Attendant procedure, pressing * the caller will be automatically routed to the exit position.

Time out supervision

AA feature supervises response time of the caller.

If the caller overflows the register time-out interval for the first time during the dialling process he will be connected to the exit position; by pressing # he receives again the complete voice menu and has the possibility to try once again from the beginning.

Wrong digit

AA feature supervises also the validity of the digit (DTMF key codes) entered by the caller and chosen in correspondence with options in selections list.

If the caller dials a wrong digit for the first time (key codes which do not have a preprogrammed directory number in the selections list) he will be connected automatically to an error voice announcement stored for this error case and has also the possibility to try again at this step. The caller can interrupt the voice prompts by starting the dialling procedure.

If the caller dials a wrong digit for the second time, he will be automatically connected to a preprogrammed exit position.

Wrong extension number

Each AA (imply: selections list) can be programmed for receiving a complete directory number.

AA-feature analyses also the validity of the received digits. If these do not result in a complete directory number, or this directory number does not exist, the caller will hear a voice announcement indicating the error case. The caller has the opportunity to try once more at the level where the wrong entries have been detected. The caller can interrupt the voice prompts by starting the dialling procedure.
If the second try has not been successful, the caller will be rerouted to the AA-exit position (e.g. *OPERATOR*).

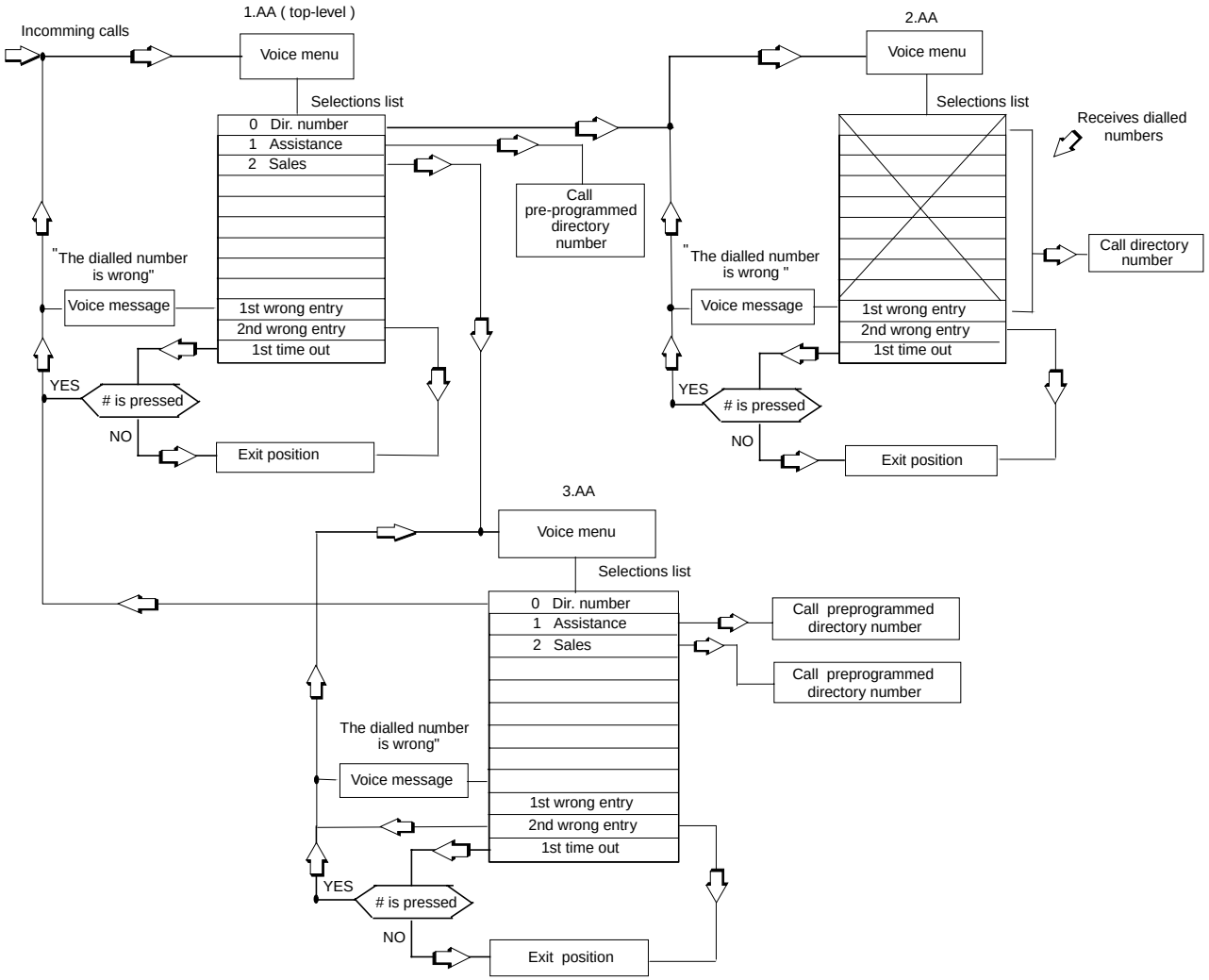
EXAMPLES

Below you will find two examples of the AA structure.

Example 1

The following chart shows the structure of a more complicated feature with a number of AAs (selections list / voice menus). The selections list of the first AA has been programmed to receive single-digit inputs.

For example, by dialling "0" the caller will hear a new voice menu which is connected to another AA. This list has been programmed to wait for complete directory numbers.



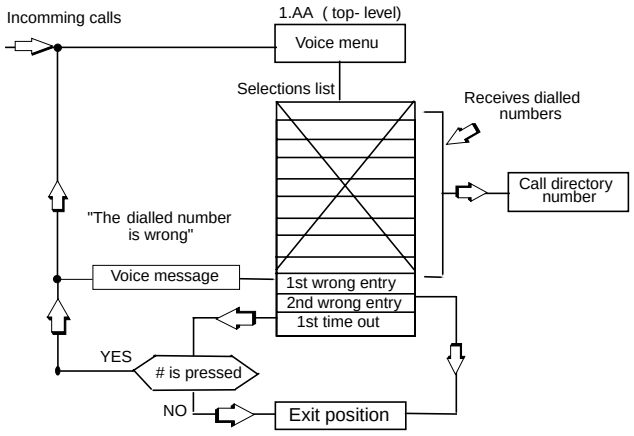
Example 2

The following chart refers to a single AA-structure.

In this example the selections list has been programmed to wait for a complete directory number.

The caller will be prompted to enter the directory number of the desired extension.

When a directory number is dialled, the external call will follow the same procedure as for a normal DID call. The error cases are also included.



Delayed Automatic Answer for the Automated Attendant function

see DELAYED AUTOMATIC ANSWER, document 160/155 34-ASB 150 02 Uen.

Capacity

Automated Attendant feature offers the possibility to create a structure with up to 32 voice menus.

The size and configuration of AA network depends on the customers' requirements.

Limitations

Only telephone sets with DTMF tones can use this feature.

The number of the simultaneous calls served by AA function depends on the number of VMU-HD channels.

If a caller is routed to AA feature, and there is no DTMF receiver and/or voice channel free, the caller will receive ring tone as long as a DTMF receiver and a voice channel becomes free. In addition a queue will be created if two or more calls are waiting.

If the AA exit position hasn't been programmed, external caller will be routed to trunk's reroute position; internal caller will be disconnected.

During the time in when the caller is actually connected to a DTMF receiver and to a voice channel, he occupies both these as long as he will remain connected with and served by the AA function. The DTMF receiver and the voice channel will become free at the moment the call is transfered to the desired directory number.

If connected to an AA, the extension can not park the call by pressing LINE , INQUIRY or HOLD key; it can not transfer AA; it can not establish also conference with AA. The AA-call will be released immediately.

The OPERATOR can call the AA only if it has no calls parked.

The OPERATOR also connected to AA can not establish conference, park or transfer it.

Just 4 internal analogue extensions (of the same board) can use AA at the same time (4 DTMF receivers on one board).

There are no limitations for internal digital extensions in this respect because digital telephone sets do not occupy any DTMF receiver.

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Programming

The AA-feature is fully programmable by the customer in terms of settling the structure of AAs.

The procedure starts with creating the Automated Attendant facility. It can be accessed only via RASC.

SELECTIONS LIST

From EXECUTIVE telephone sets, OPERATOR console and RASC it is also possible to fill/edit selections lists' parameters.

Commands for creating/editing facilities

5424
Create an Automated Attendant facility

Via this command is possible to specify the directory numbers of different AA-s (imply: voice menus) you are going to need in your specific application. The first AA (top level) must have a dialable directory number in order that every one uses AA function just by calling it directly. The directory number of all other AA (except the top-level) can (or not) have a non-dialable directory number (e.g. starting with D, *, # etc).

5624
Alter an Automated Attendant facility

This command allows you to change/edit the directory numbers of AA-s. Also is possible to change/edit the information in the "name"- field. The information here can consist up to 35 characters. The first AA's corresponding information in this field will be displayed on the telephone set of the subscriber that is using AA feature (default information is "top-level").

5524
Delete an Automated Attendant facility

Via this command you can delete an AA-level.

8701
General-announcement reference

In this command you must specify the identification number of the corresponding voice menus/ announcement.

```
10 Jul 14:40   +15°
AA GENERAL ANNO. REF. C 8701   xxxx    yy
backward   forward      c/i       return
```

xxxx — directory number of the desired AA.

yy — identification number of the current general voice announcement in the corresponding level.

Press Enter to go to the next command of the current selections list.

NOTE: Do not forget to record voice announcements first (see command 4411).

8702
Error-announcement reference

In this command you must specify the identification number of the "Error announcement".

```
10 Jul 14:40   +15°
AA ERROR ANNO. REF.  C 8702   xxxx     yy
backward   forward      c/i       return
```

xxxx — directory number of the desired AA.

yy — identification number of the Automated Attendant's error announcement of the corresponding level.

Press Enter to go to the next command of the current selections list.

NOTE: Do not forget to record voice announcements first (see command 4411).

8703 - 8712
Digit 0 (- 9) related dir no

According to the current structure of Automated Attendant-network, you can specify the addressing of these commands. The addresses can be :

- directory numbers of physical extensions, or
- directory numbers of another AA or
- operator queue, ACD queue or PBX group.
- common abbreviated numbers or
- directory number of a common or individual mail-box or
- DISA directory number

The following display refers to command 8703. The same applies for commands up to 8712.

```
10 Jul 14:40   +15°
DIG 0 RELATED DIR. NR.  C  8701  xxxx   yyyy
backward    forward      c/i       return
```

xxxx directory number of the desired AA level.

yy desired directory number to be called by pressing 0 (0- 9). It relates to the current AA level. Enter #### if you want to have automatic disconnection by pressing the corresponding digit.

Press Enter to go to next command.

8713
Automated Attendant error reroute positon

In selections list it is possible to program an exit position (for time-out and cases of wrong entries).

In this command you must specify the directory number of the exit position.

```
10 Jul 14:40   +15°
AA ERROR REROUTE POS  C  8713  xxxx  yyyy
backward   forward      c/i       return
```

xxxx directory number of the desired AA.

yyyy directory number of the error reroute position for the current AA. It can be:

- Directory number of physical extensions, or
- Operator queue, ACD queue, PBX queue.

Enter #### if you want to have automatic disconnection in case of errors.

Press Enter to go to next command.

8714
Waiting for full directory number

Each AA (its selections list) can be programmed to wait for a complete extension number or for single-digit directory number.

```
10 Jul 14:40   +15°
WAITING FOR DIR. NR.  C   8714  xxxx   yyy
backward    forward      c/i       return
```

xxxx directory number of the desired AA.

yyy YES = if you want that procedure waits for a complete directory number
NO = if you want that procedure waits for single-digit directory number.
(NO is default value).

Press Enter to go to the next command.

NOTE: If selections list has been programmed to wait for a full directory number commands 8703-8712 will be invalid.

RECORD VOICE MENUS

You can record voice menus and announcements for error cases from an Executive telephone or from the Operator console.

4603
Record announcements allowed?

It is possible to determine whether or not a certain VMU board may be used for voice announcements.

```
10 Jul 14:40   +15°
REC ANNO ALLOWED ?    4603 xxyy        zzz
backward    forward      c/i        return
```

xxyy	Enter board position (01 - 63) and 00
z	Enter relevant function: YES = Voice announcement can be stored on board NO = Voice announcement can not be stored on board (default value).

4411
Command to record the new announcement group

(accessible only via telephone set)

Via this command you can record / play / erase voice menus/announcements.

```
10 Jul 14:40   +15°
AUT. ATTENDANT    1-42              4411>
backward   forward                 return
```

The capacity of 42 voice announcements on this command is designed for 32 AA possible voice menus and 10 voice announcements free for different error cases, needed by the user.

Press Enter

```
10 Jul 14:40   +15°
AUTOMATED ATTENDANT NUMBER:            xx
                                     return
```

xx	enter the identification number of an AA voice menu/announcement you want to record / play / erase.
return	moves one step backward.

Equipment

Automated Attendant facility offers voice support to all types of incoming calls and therefore a VMU-HD is required.

For this feature a DTMF receiver and a voice channel is necessary until the caller is connected to the desired directory number.

Following boards offer DTMF receiver:

- BTU-D: it has the capacity of 8 DTMF processes (receivers at a time)
- REG
- VMU-HD :depending on the setting of the jumpers, the VMU-HD offers 16 voice channels or 8 voice channels and 4 DTM receivers

The system must be equipped at least with a VMU-HD that offers 4 DTMF receivers and can play up to 8 voice channels at a time, or with a BTU-D !

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		Database reference	
		115.fm	

AUTOMATIC CALLBACK - BUSY/FREE EXTENSION

Definition

An extension that does not receive an answer or encounters busy during a call to another extension, can order callback.

On receipt of an order the system initiates monitoring of both caller and called party.

When both of the monitored parties are free at the same time, the party who ordered callback will be rung.

When the ringing has been answered, a new call will be initiated automatically to the extension that was called originally.

Use

Automatic callback is a valuable function, when one wishes to be sure of gaining contact with the caller immediately after the latter goes free or after he/she has used his/her phone again.

During the monitoring period the extension that ordered callback can use the telephone freely.

Operation

All telephones

To order callback

An extension that, when initiating a call, encounters busy or no answer , can order callback by pressing digit key "**5**" or another selected digit.

When the system has accepted the order, the extension will receive verification tone or silence.

If the order is rejected, the extension will continue to receive busy tone.

Extensions equipped with EXECUTIVE Telephone may press the menu key **call-back.**

NOTE: Callback may not be possible because of categorisation or the current traffic situation, even if the menu key **call-back** is shown.

Callback

When both parties go free, the ordering extension is notified by a special ring signal.

The call is presented on **Line 1** or **Line 2** as a normal internal call.

A telephone with display shows:

EXECUTIVE Telephone

```
10 Jul 14:40   +15°
CALL BACK                    CALLING
directory              redial      prog
```

STANDARD Telephone

```
10 Jul 14:40   +15°
CALL BACK          C
```

When the ordering extension answers, the monitored extension is called as for a normal internal call.

The called extension receives an internal ring signal and the caller ring control tone.

While the ordering extension is being rung the monitored extension is blocked for own and other calls.

A CN call back will be handled as it is programmed via the command 0177 (see also chapter PROGRAMMING in this document)

For more information regarding Corporate Networking, see "NETWORKING, document 365/155 34-ASB 150 02 Uen.

Capacity

A maximum of 25 monitoring orders can be stored in the system.

Limitations

Definition of "busy"

- Both **Line 1** and **Line 2** are busy.
- **Line 2** is blocked for calls and the extension is busy with another call via **Line 1**, trunk of dedicated intercom line.

Definition of "no answer"

- Both **Line 1** and **Line 2** are free, but the called party does not answer.
- **Line 1** is blocked because of an ongoing call. The extension is free on **Line 2** for other calls, but the called party does not answer.

Prerequisites for callback

- Attempt to order callback to own directory number is rejected. Calling party continues to receive busy tone.
- An extension can set up several monitorings of different extensions.
- Orders from different extensions to a common extension are processed in the order they arrive.
- If, when order is issued, ongoing monitoring already between the parties exists , a new monitoring period will be set.
- Ordered supervision is always valid for dialled directory number even if this directory number has ongoing diversion.
- If parties activate "follow me" or "diversion" during monitoring period, monitoring will not be affected.
- Automatic callback is activated when both ordering party and called extension are free at the same time.
- Unless monitored parties have become free within two hours, monitoring will be terminated.
- It is not possible to set a call back to the OPERATOR.

Programming

0106
Prevent callback to extension

An extension can be programmed so that callback and messages to the extension are prevented

```
10 Jul  14:40  +15°
CALL BACK ALLOWED ?   0106 xxxx        z
 backward  forward     c/i      return
```

xxxx	Enter relevant directory number
z	Enter relevant function: Y = Callback permitted (default data). N = Callback prevented

0177
Initiate call back to CN ?

The command defines if an extension is allowed to request a call back from an extension within the corporate network.

```
10 Jul  14:40  +15°
INITIATE CB TO CN ?   0177   xxxx        z
 backward  forward     c/i      return
```

xxxx	Enter relevant directory number
z	Enter relevant function: Y = CN Call Back allowed. N = CN Call Back not allowed (default data).

Following commands are only accessable via RASC:

2008
Verification on call back ?

The system supplies normal verification tone when it accepts an order. This can be altered so that silence is received instead.

valid data:	YES	(verification tone)
	NO	(silence)
default data:	YES	

2402
Call back

Altering digit for ordering.

The postdialling digt used for callback is normally "5".

This digit can be changed.

Equipment

None.

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		Tillhör/Referens-File/Reference: ASB 150 02	
		Database reference: 116.fm	

AUTOMATIC CALLBACK - TRUNK/ROUTE

Definition

An extension that, on a call to an individual trunk or route, encounters busy can order automatic callback.

When the order is made the system initiates supervision of both the caller and, the selected route or trunk.

When the relevant trunk or an optional trunk in the relevant route goes free the extension that ordered callback will be called back.

On activation of callback a new call will be initiated automatically on the selected trunk at the same time as the ordering extension is called.

Use

External callback is a function that is utilised when one wishes to initiate an outgoing call but finds that all trunks are busy.

In the event of several orders, e.g. for the same route, the orders will be processed in the order in which they were received.

During the monitoring period the ordering extension user is free to use his telephone.

Operation

To order

An extension who on initiation of a call encounters busy tone can order callback by keying digit "**5**" or other selected digit.

A user with an EXECUTIVE telephone can press menu key **call-back** to activate the function.

When the system has accepted the order the ordering extension hears verification tone or silence.

If the order is rejected, busy tone will continue.

Callback

When the trunk and ordering extension are free at the same time, the latter will be rung with a special ring signal at the same time as the selected trunk is seized to prevent incoming calls.

The call is presented on **Line 1** or **Line 2** as a normal internal call.

When the extension user answers he or she hears internal dial tone and the display goes blank.

The extension can now dial the route number followed by the number of the relevant public network subscriber.

If the extension fails to answer the callback within 8 seconds, the supervised trunk will be released at the same time as the ring signals cease.

Capacity

A maximum of 25 callback monitoring tasks can be stored in the system concurrently.

Limitations

- Each extension can only set up one monitoring task to a trunk or route. However an extension can set up several internal monitoring tasks that run concurrently with the external one.
- If the ordering extension activates "follow me" or "diversion" during the monitoring will not be affect.
- Callback is activated when both ordering extension and trunk are free at the same time.
- If the monitored parties are not free at the same time during a 30-minutes period, monitoring will be terminated

Programming

Following commands are only accessable via RASC:

2008
Verification on call back

The system supplies normal verification tone when it accepts an order. This can be altered so that silence is received instead.

valid data:	YES	(verification tone)
	NO	(silence)
default data:	YES	

2402
Call back

Altering the digit for ordering. The postdialling digit for callback is normally "5" but this digit can be changed.

1006
Call back allowed ?

Each trunk can be programmed so that callback to the trunk is prevented.

3302
Callback allowed ?

Each route can be programmed so that callback to the route is prevented.

Equipment

None.

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		Database reference	
		120.fm	

BACKGROUND MUSIC

Definition

In idle state extension users equipped with system telephones may listen to music or other information via the monitoring loudspeaker.

Use

Background music can be used to listen to various forms of recorded music, the radio or other information.

The music/information source can be connected to a free trunk.

If the same source is used both for music-on-hold and background music, the source can be connected to audio-input on the CPU-D_ board.

Operation

System Telephones

Connection

Connection of background music is achieved as follows:

- Dial selected number of the facility

or

- Press programmed name selection key

Disconnection

Disconnection of background music:

- Press **Clear**-key
  (Operator's Console: Press Loudspeaker-key)

or

- Dial directory number again

or

- Press programmed key

The lamp for **Line 1** is seized during the key sequence but is disconnected immediately thereafter.

The **On/Off** - and **Mute** lamps lights and glows steadily when background music is connected.

The volume of the background music can be adjusted by means of the **+** and - -keys on the telephone.

To change the music channel

If several channels exist, a new channel can be connected directly by dialling the directory number of the new channel.

Note:

For ASB 150 02 systems up to R10:

To activate the programming the system has to be restarted !

For ASB 150 02 systems starting from R10:

Restart of system after programming is not necessary anymore.

Capacity

There can be a maximum of three music / information channels. Furthermore, a music channel can be created for music-on-hold. See also under "MUSIC-ON-HOLD", document 343/155 34-ASB 150 02 Uen.

Limitations

Background music does not seize (occupy) any traffic function key.

When an incoming call is presented or on initiation of a call, background music will be disconnected automatically.

Background music returns immediately when the telephone has returned to idle state.

Only external connected audio equipment can be assigned as background music source.

Programming

Note:

For ASB 150 02 systems up to R10:

to activate the programming the system has to be restarted !

For ASB 150 02 systems starting from R10:

restart of system after programming is not necessary anymore.

5404
Create background music

This command creates a music channel for background music by assigning it a vacant directory number that does not conflict with existing directory numbers, see command group 56.
Command 3601 determines how the music source is to be physically connected to the exchange.
Command 5403 creates a music channel, which may be utilised for background music as well as music for camped-on parties.

3601
Sources for music

Sources for music-on-hold or background music are connected either to trunks reserved for this purpose or the analogue port on the CPU-D board. This command defines a link between a music source and a call number. If the music-source is the analog port on the CPU-D board, the call number is D#00.
If no link is defined, a parking tone is supplied instead of music.
Removal of a music source is done by pressing the dial key to erase the call number.
Before this command can be used, the commands for background music (5404) or music-on-hold (5403) must have been initiated. The trunk used for music shall be programmed for "no transmission" (command: 1302) and "no PTS signal from parent exchange" (command: 1307).
Range of values: 0 - 9999 for trunk lines.

D#00 The analog input on the CPU-D board.

1302
Outgoing digit transmission

The command states how the digits are sent from the interworking exchange. The initial value depends on the type of the BTU .
Set this command to "no transmission".

1307
PTS-signal from PE ?

The command is used to state whether the exchange is to wait for a proceed-to-send signal (PTS signal) from the parent exchange.

Set this command to NO.

5504
Delete background music

This command will delete a music channel used for background music.

Command 5503 deletes the music channel which is utilised for background music as well as for music for camped-on parties.

5611
Alter background music

If you want to change the number to a new number that is in conflict with the old number, this cannot be done directly. In such cases first change to a random free number and then change to the desired number.

However, references to previous numbers will remain. These references are deleted or substituted by the new number.

If no number is indicated, an error message will be displayed, since the directory number is the only identity of the music channel, and therefore must not be deleted. To delete a music channel from the system, see command group 55.

5806
Show background music.

This menu displays a survey of all defined directory numbers for music.

KEY FOR BACKGROUND MUSIC

If a special key for connection/disconnection of the function is required it will be necessary to program a name selection key.

See also under "NAME SELECTION", document 360/155 34-ASB 150 02 Uen.

0301
Function of the programmable key

This menu shows the function of the progammable keys for the selected extension.
xxxx indicates irrelevant information for selected function of the key.

This command states which function a key is to have. For some key functions it is possible to program an associated number, how incoming calls are to be presented and ACD-group priority.

If an extension is programmed as a guest extension, (command 0118) or as a data extension, (command 0130) key 0 is used as wake-up key and data line respectively. In this case it is not possible to alter the function of key 0.
Note, however, that these functions cannot be entered with command 0301.

0302
Number associated with the key

This menu shows the function of the progammable keys for the selected extension.

xxxx indicates irrelevant information for selected function of the key.
This command states the number that is to be associated with a programmable key. A number may be associated with the following key functions:

Name selection:	One 1-4 digit number. The number may consist of digits,*,# (and wait for second dial tone)
Post dialing:	One 1-4 digit number. The number may consist of digits,*,# (and wait for second dial tone)
Trunk line:	Trunk line directory number
Supervision:	Directory number of supervised extension
Dedicated intercom:	Directory number of other extension
Voice paging:	Serial number of paging group, 0-7
ACD-group:	Serial number of ACD-group, 0-7
ACD-monitoring:	Directory number of monitored ACD-operator

Trunk line data

Program the following commands with the stated value for the trunk line used.

1201
Line signal scheme

The command is used to select the line signal table. The selection is based on the type of interworking exchange connected. The initial value of the line signal table used, depends on type of BTU and market version.

Enter new value = 1

Equipment

Background music requires an external music source and an analogue trunk (BTU-A_) per music source. If the background music uses the same source as

music-on-hold this can be connected to the audio-input on the CPU-D_ board.

Please note that Background music does not work on the subequiped version of the BTU-A_.

Regarding the necessary DIP-switch settings on the BTU-A_, please refer to document

1531-BDV 113 08 Uen (for BP 250)
and
1531-BDV BS 101 05 Uen (for BP 50).

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
SEA/EBBMP Pfleger H.	SEA/EBBx/E	121/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved	Kontr/Checked	Datum/Date / Rev	Tillhör/Referens-File/Reference
SEA/EBBMP		99-07-15 / D	ASB 150 02
		Database reference	
		121.fm	

BYPASS CALL DIVERSION AND FOLLOW ME

Definition

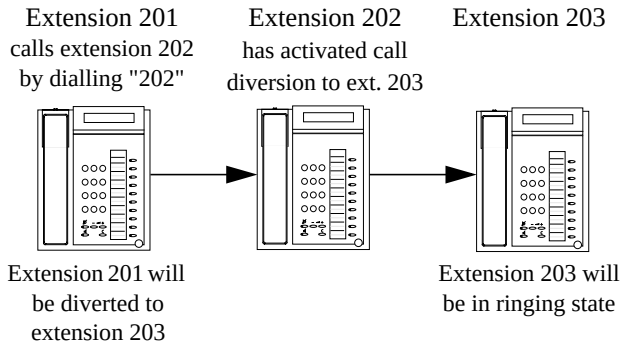
If an extension has activated call diversion or follow me, you can bypass call forwarding by dialling a specific code.

Use

Bypass call diversion and follow me makes it possible to call a specific extension, even if call forwarding is activated on this extension.

Operation

If there is any kind of call forwarding (=diversion direct, diversion on busy, diversion on no reply or follow me) active on an extension, calls to this extension will automatically be routed to the programmed directory number.



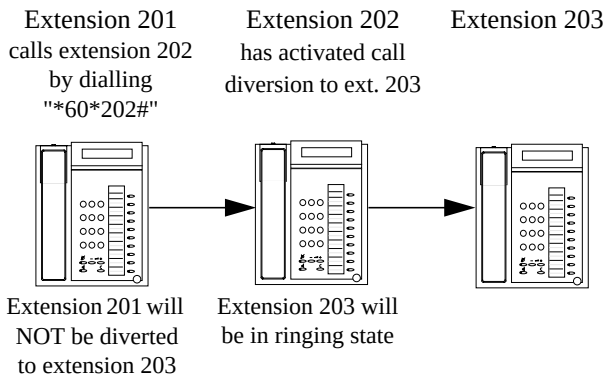
NOTE: For more information concerning "call forwarding" see "diversion direct", "diversion on busy", "diversion on no reply" or "follow me".

If you have the permission, active call forwarding to another directory number can be bypassed. In that case the dialled extension will be called, no matter whether it has activated diversion direct, diversion on busy, diversion on no reply or follow me.

If you want to call an extension without being forwarded to another directory number, the following procedure has to be applied:

- Lift the handset. (Not necessary for EXECUTIVE, STANDARD and ECONOMYplus Telephones)
- Dial *60*xxxx#
  xxxx.....extension number

  You will be connected to the specified extension, no matter if it has activated diversion direct, diversion on busy, diversion on no reply or follow me.



Capacity

All extensions, which have activated call forwarding, can be called directly without being diverted.

All guest extensions, which have activated "Do not disturb" can be called.

Limitations

Bypass call diversion and follow me can only be used from extensions. It can not be used from the operator and from fictive numbers.

The operator has for this purpose his own Bypass-key.

Programming

3082
Bypassing call diversion ?

This command specifies which ACOS (A-categories) are allowed to bypass call diversion and follow me.

```
10 Jul 14:40   +15°
BYPASS CALL DIVERSION ?  C  3082    xx     z
 backward    forward       c/i       return
```

xx	Enter ACOS value (value: 0-15)
z	Enter the relevant function. Y = Calling party with specified ACOS is allowed to bypass call diversion and follow me. N = ACOS is NOT allowed to bypass call diversion and follow me. (Default data)

Equipment

No additional hardware necessary.

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
SEA/EBMP M.Plattner	SEA/EBAX/E	140/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved / Kontr/Checked		Datum/Date / Rev	Tillhör/Referens-File/Reference
SEA/EBMP		98-05-29 D	ASB 150 02
		Database reference	
		140.fm	

CALL INFORMATION LOGGING (CIL) FUNCTION

Definition

Call Information Logging, hereafter refered to as CIL, constitutes the possibility to register (log) call data for all calls or certain types of calls.

Printouts and storage of call data require the connection of a peripheral unit.

The connected equipment can consist of a printer for chronological output.

Use

The CIL-function is used in those applications where monitoring of costs for individual calls is desirable or when it is desired to apportion telephone costs fairly within the organisation (company).

A connected CIL-computer enables stored call records to be sorted according to various sorting concepts.

It is then possible to obtain daily and monthly reports for the entire organisation or individual departments.

The CIL-function also registers entered account numbers, which facilitates the sorting of call records by account.

It is possible to decide whether all calls shall be logged or, e.g., external calls only.

The CIL-function can also be used in conjunction with hotel systems.

See also facility description HOTEL, document 241/155 34-ASB 150 02 Uen.

Function

Output format

For a detailed description of the various output formats, see documents INTERWORK DESCRIPTION (1 - 9/155 19-ASB 150 02 Uen). These documents are only for "internal information" and therefore have to be ordered separately. Please contact your local supplier in this respect.

All of the call types that have been selected for logging are presented to the output port.

Each call, internal, external or inquiry call initiates a call record in which data relevant to the call is logged.

Each call record is logged with the following data:

Date

Is stated with year, month and day (yymmdd).

End time

Is stated in hours and minutes (hhmm).

Caller’s number

4 digit field, containing caller’s number (0-9999).

Call duration

The call duration is calculated when a call ends and is presented in hours, minutes and seconds (hhmmss).

Meter pulses

If the public exchange sends metering pulses these are registered here (0-9999).

Dialled access code

4 digit field containing the dialled route access number of the trunk lines (0-9999).

Dialled number

Dialled external number with a maximum of 24 digits. Internal number for incoming external traffic or internal call.

Information letter

This letter provides status information concerning the type of call.

Calling party

Directory number of calling extension or trunk.

Account code

Digit combination entered by caller. 1 - 15 digits.

Authorisation code

When authorisation code is used for outgoing calls, this 4 digit field will contain the directory number of the extension telephone via which the call is conducted (0-9999).

Queue time, answer

The time from which ringing is registered until the call is answered. Minutes and seconds (mmss).

Costs

11 digits field that state the value of costs with the range of 0 - 99999999999.

Cost state

One character for cost state information with following values:

- The ‘cost of the call’ is calculeted internally by ASB15002.
- The ‘cost of the call’ is received from network.

Trunk number

4 digit field containing the directory number of the seized trunk line (0-9999).

Sent access code

4 digit field containing the selected route access number of the trunk line (0-9999).

Sent number

24 digit field containing the sent number. If Least Cost Routing will not be used this field has the same content as the fiel "Dialled number".

A-number

20 digit field containing the A-number.

Capacity

A maximum of two peripheral units (CIL-computer and/ or printer) can be connected.

These can have parallel output.

Limitations

The system is equipped with a number of buffers that can store call records if the output port is blocked temporarily.

When a call is transferred, a new call record is initiated for each new completed transfer.

Programming

Following commands are only accessable via RASC:

A number of parameters has to be programmed, in order for the output to the connected external equipment to function for individual desires.

- Output criteria to determine which types of calls that are to be printed out.
- Communication channel for outputs
- Format for outputs

OUTPUT CRITERIA

You can program which types of calls that are to be registered and printed out. The following types can be programmed:

- Internal calls
- Incoming external calls
- Outgoing external calls

You can also determine if the output is to take place after a certain call time, or after the reception of a certain number of meter pulses / costs.

The output can also be made dependent on the first digit in the external number.

6201
Log internal calls ?

This command is used to determine whether all internal calls in the PABX are to be logged or not.

6202
Log incoming calls ?

This command is used to deterime whether all incoming external calls are to be logged or not.

6301
Log outgoing calls ?

This command is used to deterime whether outgoing external calls are to be logged or not.

6302
Log duration time

This command can be utilised if it is desired to log outgoing external calls (see command 6301), but exclude "short" calls.

The command is used to set a minimum call duration time for an outgoing external call to be logged.

Further prerequisites can be defined for determining which outgoing external calls shall be logged, see commands 6303 and 6306-6315.

With the minimum call duration time = 0000, outgoing external calls will be logged irrespective of call duration.

Value = mmss mm = 00 - 59 min
ss = 00 - 59 s

6303
Minimum number of meter pulses for logging

This command can be used if it is desired to log outgoing external calls (see command 6301), but exclude those calls that have incurred "few" meter pulses.
The command is used to determine the minimum number of meter pulses required for an outgoing external call to be logged.
Value = 0 - 9999 meter pulses

Further prerequisites can be defined for determining which outgoing external calls shall be logged, see commands 6302 and 6306-6315.
With the minimum number of meter pulses = 0000, outgoing external calls will be logged irrespective of the number of meter pulses.

6332
Log minimum costs

This command can be utilised if it is desired to log outgoing calls, but exclude those calls that have incurrent "few" costs.

The command is used to determinate the minimum costs required for an outgoing call to be logged.

valid value 0 - 999999999 costs

default value 0

With the minimum cost = 0,0 outgoing external calls will be logged irrespective of the cost.

6304
Bar outgoing calls ?

In certain cases, e.g. when external/peripheral equipment for storage of call data is out of order, the desired logging is not possible. Using this command it is possible to select whether to permit subsequent

outgoing external calls without logging or to restrict such calls until logging is again possible.
Note that it is always possible for the operator to initiate outgoing external calls irrespective of the value of this command.

6305
Dialled number suppress

Suppression of the last digits in the dialled number. The desired number of end digits can be stated with an "X" on the printout, if you for security reasons do not want to show the complete external number.

Valid data: 00 - 15
Default data: 00 (all digits are registered)

6306-6315
Registration of calls which start with a certain digit

Every trunk line can be programmed in such a way, that the first digit in the trunk line decides if an output is to be carried out.

6203
Block log output

The command is used when a temporary stop of logged call data is desired. During temporary stops in output the logged call data will be stored internally in the PABX. Temporary stops in output can be desirable during maintenance of connected external/peripheral equipment, e.g. in order to insert paper in a printer.

It should be noted that only a limited number of call records can be stored internally in the PABX. If the PABX's internal storage capacity is exceeded, it may be decidee whether or not to block outgoing external calls from the PABX, see command 6304.

COMMUNICATION CHANNELS

6006
Device type

The command defines to which type of connected unit the I/O-port is to be adapted.In some cases, master/ slave must also be stated by means of command 6010. When programming the unit, the values of several parameters adapted for the connected unit will be set automatically.
Please note that using the V.24 bi-directional you have to state value 13 !

Unit values :

- 0 = Unspecified
- 1 = Operation and maintenance centre (O&M) with ECOM/ECEL
- 2 = Unspecified printer/terminal
- 3 = Printer type 1
- 4 = Printer type 2
- 5 = Computer for administration of call information logging (CIL),
- 6 = Computer for administration of call information logging (CIL),
- 7 = Unspecified printer/terminal
- 8 = Connection to computer with standard hotel line protocol. The PABX is master, the hotel computer is slave.

- 9 = Connection to computer with standard hotel line protocol. The PABX is master, the hotel computer is slave.
- 10 =Connection to computer with line protocol type 3.
- 11 =Operation and maintenance centre (O&M centre) with RASC and MIS
- 12 =Connection to computer with line protocol type 2. The PABX is master, the hotel computer is slave.
- 13 =Hotel computer, bi-directional V.24 interface with line protocol type 4.

6007
Character set

The command defines which set of characters shall apply for the local-connected unit for the stated I/O-port .

0 = The PABX's internal set of characters (no characters are converted)

1 = US-ASCII

2 = Swedish/Finnish ASCII

3 = Character set 2 in printer ERICSSON 7111 (strapped for compatibility with IBM-PC) and character set 850 (Multilingual) for SOFTECH hotel computer.

4 = Danish/Norwegian ASCII

5-9 = Undefined values

6009
Baud rate

The command determines the bit speed for the stated V.24 port . The type of local-connected unit and set of characters for the local-connected unit, commands 6006, 6007 and 6010 must be defined.

0 = The stated I/O-port will not permit local V.24 connections.

1 = 50 Baud	6 = 300 Baud	11 = 3 600 Baud
2 = 75 Baud	7 = 600 Baud	12 = 4 800 Baud
3 = 110 Baud	8 = 1 200 Baud	13 = 7 200 Baud
4 = 135 Baud	9 = 1 800 Baud	14 = 9 600 Baud
5 = 150 Baud	10 = 2 400 Baud	15 = 14 400 Baud

6010
PABX is master or slave in local connections

Determines whether the PABX is 'master' or 'slave' when connected to certain types of local-connected units.

The command determines whether the PABX will be master or slave when connected to an external equipment (V24).

This command will be ignored when connecting certain types of external equipment (see command 6006).

6011
Autoselect allowed

Determines whether the port may be used by functions which have no commands of their own for the specification of a communications port.
Set this command to NO.

6012
Route on request

Controls connection requests initiated by external equipment. This command should be empty (Spaces).

6401
Initiate I/O port

This command is used to determine which line position(s) is (are) used for the communication channel(s). The stated line position shall be equipped with one board with V.24-interface (AUX or CPU-D). Note that the individual number 1 on CPU_D has a V.22-interface .
The line position is entered as : ppiii
with pp = board position (00-63)
iii = valid individual

ppiii = Space (means channel is switched off)

If both communication channels are switched off there is no in/output and furthermore the entire call logging function is shut down.

NOTE: Before output of call data can take place, the signaling method via the V.24-interface on the board (AUX,CPU_D) at the stated line position must be determined, and thereafter the communication channels can be activated/deactivated and the format may be selected in accordance with the desired operation, see command 6402 .

6402
Activate I/O port

The command is used to select the type of operation for in/output of call and hotel data.

a. One external unit for storage of data from ASB150.
b. One external unit for transmission of hotel data to ASB150.
c. Two external units for storage of data from ASB150. Output occurs in parallel at both units.
d. Two external units for storage of data from ASB150. Output normally occurs at one of the units, but will be switched automatically to the second unit, if the first unit develops a fault that prevents output at it.
e. Two external units:
- one for storage of data from ASB150.
- one for transmisison of hotel data to ASB150.

For the types of operation listed above the following applies:

a. The initiated communication channel (see 6401) shall be active.
b. The initiated communication channel can be active or passive (lacks significance).
c. Both communication channels shall be active.
d. The communication channel that is to be used as first choice shall be active and the second choice channel passive. If both channels are passive, there will be no output.
e. The initiated communication channel (see 6401) for storage of data from ASB150 shall be active.

NOTE: If communication with external/peripheral equipment is interrupted for some reason or other, an attempt can be made to restart communication by first setting the channel to passive, and thereafter setting it to active again. This procedure includes the risk that some data can be lost.

It is also possible to specifiy that automatic attempts to try to reactivate the channel shall take place after a stipulated time following a fault. If a previously passive and fault-marked channel is activated, it is possible that some data are lost.

FORMAT FOR OUTPUT

6403
Format table

This command is used to determine the format of the data in the data record, so that it suits the connected external unit. If data is sent to a connected external printer, a printer format needs to be selected. As a result a table header is obtained on the printout, which makes the information clearer.
If the format is changed for a channel that is marked faulty, it is possible that data are be lost.

FORMAT 00-29: Data format for output to external unit.

00 No formatting, the channel is shut down

01 Call data to computer according to MD110/standard format

02 Call data to printer, with table header

03 Call and hotel data to printer, with table header

04 Call and hotel data to computer according to ASB150/ht format

05 Call and hotel data to computer according to MD110/ht format

06 Call and hotel data to computer according to HIS format

07 Call and hotel data to computer according to CILHOTEL format

08 Call and hotel data to computer according to CIL2HOTEL format

09 Call and hotel data to computer according to CIL3HOTEL format

10-29 Reserve

FORMAT 30-59: Data format for input from external unit.

30 No formatting, the channel is shut down

31-33 Reserve

34 Hotel data according to ASB150/ht format

35 Hotel data according to MD110/ht format

36 Hotel data according to HIS format

37 Hotel data according to CILHOTEL and CIL2HOTEL format

38 Hotel data according to CILHOTEL and CIL3HOTEL format

39-59 Reserve

FORMAT 60-99: Data format for both-way communication.

60 No formatting, the channel is shut down

61-63 Reserve

64 Call and hotel data according to ASB150/ht format (bi-direct)

65 Call and hotel data according to MD110/ht format (bi-direct)

66 Call and hotel data according to HIS format (bi-direct)

67 Call and hotel data according to CILHOTEL format (bi-direct)

68 Call and hotel data according to CIL2HOTEL format (bi-direct)

69 Call and hotel data according to CIL3HOTEL format (bi-direct)

70-99 Reserve

Configuration of a bi-directional V.24 interface:

A bi-directional V.24 interface for CIL/HOTEL can only be installed on CIL-port 0 (command 6401). Activate the CIL-port 0 with YES (command 6402) and choose a format for bothway communication (64 - 99).

6404
Lines/page

This command is used to determine the number of lines per page for printout on a printer. Value = 0 - 99.

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		140/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved	Kontr/Checked	Datum/Date	Rev / Tillhör/Referens-File/Reference
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ALARM FUNCTIONS AT OUTPUT

6405
I/O time supervision

The command is used to determine the time for time supervision (monitoring) of output or data on the communication channel. Value = 70 - 255 s.
Timeout means that output of a data record has not been completed within the stated time and always results in generation of an alarm and in "fault marking" of the relevant communication channel. If the other communication channel is initiated and active, output will take place on this channel only. If the other communication channel is initiated and passive, output starts on this channel, otherwise there will be no output at all; registered call data will be stored internally.
If the output of the fault-marked starts again due to an external event, e.g. restart of the peripheral equipment, output will continue on this channel and output on the other channel is terminated, if the latter is programmed passive. This takes place irrespective of whether or not command 6406 has been initiated.

If command 6406 has been initiated, time measurement will start with the time specified and the fault-marked communication channel will be activated automatically after this time. After activation, a new attempt will be made to put out call data on this communication channel.
A time shorter than 70 seconds, which cannot be defined as a timeout, would then be obtained although no fault existed. This relatively long time is due to the fact that data records can exist in the queue as well as in the external/peripheral equipment.

6406
Automatic I/O activation

The command is used to determine the time for automatic activation of output on a fault-marked external communication channel. Timeout results in the fact that at the next output occasion a new attempt will be made to again use this communication channel.

Value = 0 - 11 min

If the time is set = 0, there will be no automatic activation attempt. A manual attempt can be made to start communication on a fault-marked communication channel by first setting the channel to passive and thereafter setting it to active again, see command 6402. This procedure includes the risk that data might be lost.

Equipment

The CIL-function requires a V.24-port on the CPU-D_ board or an AUX board, and a peripheral unit, that is CIL-computer and/or printer.

CALL METERING

DEFINITION

The call metering feature collects the following data for outgoing calls.

- Costs
- Received call-metering pulses
- Conversation time

ASB 150 02 processes the costs and number of call-metering pulses and prepares them for display on system telephones as well as printout.
The conversation time of the current call may be displayed on system telephones.

USE

Information on call charges offers incentives for more efficient call handling. ASB 150 02 makes the following information available:

Information on trunk lines

You may use the information on trunk lines, e.g. for checking the account you receive from the public network operator.

Information on trunk lines is offered in the following forms:

- Display of the accumulated costs to individual trunk lines
- Display of the total of accumulated costs to all trunk lines
- Printout of the costs and call-metering pulses for individual trunk lines
- Printout of the total of costs and call-metering pulses for all trunk lines.

Information on caller

Callers may be extensions, trunk lines and tie lines that bring about costs through access to chargeable trunk lines.

Information on the accumulated costs of callers serve for checking and charging as well as developing cost-effectiveness in all staff members. The following information on callers is made available to you.

- Display of accumulated costs to individual callers
- Display of the total of accumulated costs to all callers
- Printout of accumulated costs and call-metering pulses for individual callers

Printout of the total of accumulated costs and call-metering pulses for all callers.

Information for user

A user may get information on the costs he himself has caused. This information is available in an updated form, that is to say at the time the costs occur. Thus, the staff members realise how much a telephone conversation costs and are urged to use the telephone in an efficient way.

Information for users is offered in the following forms:

- Display of the current call charges (or call-metering pulses or conversation time) during the call
- Display of the last call charges
- Display of the total of own costs

OPERATION

Reception of metering information

Metering information may be received by analogue and digital trunks.
Network providers make metering information available in the form of call-metering pulses or call charges. Analogue trunks send call-metering pulses. Digital trunks can transmit call-metering pulses or costs.

At analogue interfaces suitable call-meter receivers are necessary for the reception of call-metering pulses.

Conversion and storage of metering information

The received call-metering pulses are converted into costs by means of a conversion factor (costs/pulses).

ASB 150 02 stores costs and pulses. Costs may be displayed in local currency. A three-figure abbreviation of the local currency may be placed before or after the amount of costs.

Call information during the call

It is possible to display current call information during a call:

- Costs
- Number of call-metering pulses
- Conversation time
- No indication

If the desired indication is not available, ASB 150 02 automatically goes back to the next possibility, e.g. instead of call-metering pulses the conversation time is displayed (e.g. for a tie line, where information about pulses or costs is not provided).

Information is updated every 15 seconds.

Activate and deactivate

The indication of the call information may be activated or deactivated with the following function code.

- Dial * 41 #

The setting is valid until the function code is entered once again.

Activate and deactivate function for current call

This function may be used by pressing the menu keys of system telephones DBC 213 and DBC 662.

The menu key F4 – "cost-off“ / "cost-on“ (DBC 662: "coff“ / "con“) – activates and deactivates the display of the costs.

This setting is only valid for the current call. At the next call, the display again has the setting defined by command * 41 #.

Last call charges

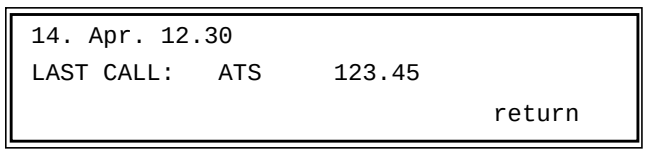
After termination of the call you may query the costs of the call.

The display shows the costs.

If no cost information has been available during the call, no last call charges will be displayed (e.g. in case of tie line calls).

Operation

- Use function code * 46 # (or the corresponding programmed name selection key).



- For return to idle state, press key C (Clear) or the menu key "return“.

Operator supervised call

Charges for calls, established for extensions via the operator may be displayed at the operator console after the extension terminates the call.

Operation:

- Press function key "Meter" at the operator console hone before transferring the trunk line to the extension.

After termination of the ordered call the operator receives a recall.
At the recall the operator telephone shows the costs of the call.

Menu keys

In principle, the menu keys are only offered if the function is available on your system telephone.

activate: serves for confirmation of the entered password

caller: display of costs to caller (extensions, trunk lines and tie lines having access to chargeable trunk lines).

check: activates the integrated system test for call metering.

coff: see "cost-off“.

con: see "cost-on“.

cost-off: deactivates the indication of running call information for current call.

cost-on: activates the indication of call information for current call.

cost/pulse: switches between display of costs and display of call-metering pulses at system check.

display: displays the costs.

detail: displays the costs to individual directory numbers.

next: (1) displays the costs to the next directory number.

(2) displays the next invalid counter during system test.

other: for display of costs to callers or trunks.

print: prints the costs and call-metering pulses (printer is necessary).

reset: (1) cancels the costs and call-metering pulses. For resetting all counters in a group a printer is necessary because all counters are printed before reset.

(2) cancels invalid counter at system check. (No printout in this case.)

return: (1) back one menu interface.

(2) Confirmation of the reset of all counters in a group.

rtn: see "return“.

trunk: for display of costs to trunk lines.

Display of own costs

Operation

- Dial function code * 45 # in idle state.

The display of your telephone shows the costs accumulated since the last reset.

```
14. Apr. 12.30
OWN COST:   ATS     123.45
other     check                 return
```

- Press menu key "return“ to reset the display to the initial state.

Display of costs to callers and trunks

Display your own costs

Read out your own costs and the menu keys will offer the following options:

```
14. Apr. 12.30
OWN COST:   ATS     123.45
other     check                 return
```

Display of costs to others

- Press menu key "other“.
- Enter the password for call metering and confirm the input with menu key F1 "activate“.

The display shows the type of meters that can be selected.

```
14. Apr. 12.30
SELECT TYPE OF METER
caller    trunk                  return
```

You may now select whether you want to see the costs to callers or trunks. For indication of costs press either "caller“ or "trunk“.

Determine scope of directory numbers

After you have selected "caller" or "trunk", you may display the costs to a specific directory number or to all callers and/or trunks.

(1) Display of costs to a group

```
14. Apr. 12.19
ENTER DIRECTORY NUMBER:
display   print      reset      return
```

- Leave the field for directory number blank and press the menu key "display“ to see the costs to all directory numbers of the group callers or trunks.

```
14. Apr. 12.20
200-280:   ATS     123.45
next      print      reset      return
```

- By pressing the menu key "detail“ you receive the costs to the individual directory numbers.

```
14. Apr. 12.20
COST 200:    ATS    123.45
next      print      reset      return
```

- By pressing menu key "next“ you may read out the costs to the next directory number.

Display of costs to a directory number

```
14. Apr. 12.21
ENTER DIRECTORY NUMBER:
display   print      reset      return
```

- Enter the desired directory number.
- Press menu key "display“ to show the costs.

```
14. Apr. 12.21
COST 201:    ATS    123.45
          print      reset      return
```

Printout of costs and call-metering pulses

Printout for a group

You may also print metering information for all directory numbers within the group of callers or trunks.

- Proceed according to the procedure "Display of costs to callers and trunks“ until "SELECT TYPE OF METER“ is displayed.
- Select the desired group (caller or trunk).

```
14. Apr. 12.30
ENTER DIRECTORY NUMBER:
display   print      reset      return
```

- Leave the field for directory number blank and press the menu key "print“

Printout for a directory number

- Proceed according to one of the above mentioned procedures to display the costs to a directory number.

```
14. Apr. 12.30
COST 200:    ATS    123.45
(next)    print      reset      return
```

- Press menu key "print“.

Reset of counters

Reset of all counters in a group

For this function a printer is necessary. You may cancel metering information for all directory numbers within the group of callers or trunks.

- Proceed according to procedure "Display of costs to callers and trunks“ until "SELECT TYPE OF METER“ is displayed.
- Select the desired group (caller or trunk).

```
14. Apr. 12.31
ENTER DIRECTORY NUMBER:
display   print      reset      return
```

- Leave the field for directory number blank and press the menu key "reset“

The connected printer prints all counters of this group.

```
14. Apr. 12.31
PRINT IS READY
                                return
```

- Check the printout before confirming reset with menu key "return“.
- Press function key C (Clear) to abort the reset procedure.

Reset of the counters for a directory number

You may cancel the metering information for a directory number.

- Proceed according to one of the above mentioned procedures to display the costs to a directory number.

```
14. Apr. 12.20
COST 200:    ATS    123.45
next      print      reset      return
```

- Press menu key "reset“.

If ASB 150 02 is connected to a printer a printout is made.

Printout information

Example of a printout

Call Metering Information

Date: 97 10 31 **Time:** 19:26

Space for freely programmable lines.
Here you may insert four freely programmable lines.
Each line can have up to 50 characters.

Reason for printout: Read / Reset
Division: Total system
Group: Callers / Trunks
Directory number range: All / [directory number]
Currency: ATS

Dir No	Name	Pulses	Costs
200	Operator	778	622.40
300	David Chambers	888	710.40
305	Barbara Klein	123	98.40
401	Guy Cooper	456	364.80
555	Joe Watson	24	19.20
560	Jennifer Collins	48	38.40
TOTAL:		2317	1853.60

FORM FEED is sent before and after the printout

The printout contains the following information:

Call Metering Information

Header with fixed text.

Date: 97 10 31 Time: 19:26

Date and time in the format "Date: YY MM DD“ and "Time: hh:mm“.

Freely programmable lines

Four freely programmable lines with up to 50 characters per line. With system telephones up to 40 characters per line may be programmed.

Reason for printout:

In which form the printout has been ordered is presented in the following form.

- Printout without reset:
  "Reason for printout: Read“.
- Printout with reset:
  "Reason for printout: Reset“.

Division: Total system

This field is reserved for future applications. At present, it always displays "Total system“.

Group:

States whether it is a printout of callers or trunks.

Directory number range:

States the range of directory numbers that are printed.

- All: All directory numbers of the selected group.
- [directory number] states the directory number of the caller or trunk.

Currency:

States the local currency for the costs.

Table

The table has 4 columns. Names and column headers are left-justified, numeric information is right-justified.

A blank line after each fifth line grants perfect readability. The table header is repeated on each new page.

System check

The system check locates all counters that are not assigned to a valid directory number after change of directory number.
If invalid counters are located these may be cancelled, in order to set free system resources, that have been tied.

Operation

- Display own costs and the menu keys offer the options "other“, "check“ and "return“:
- Press menu key "check“.

If invalid counters are found, the display shows:

```
14. Apr. 12.20
CALLER RECORD FAULTY
display                          return
```

- By pressing the menu key "display“, invalid counters are displayed.

```
14. Apr. 12.21
213        ATS   5700.00          COSTS
next   cost/pulse    reset       return
```

Select with menu keys one of the following functions:

- next: Displays the next invalid counter.
- cost/pulse: Switches between display of costs and display of call-metering pulses.
- reset: Cancels the invalid counter (no printout in this case).
- return: Back to the previous menu interface.

Counter overflow

The counter value indication for costs and call-metering pulses is continuously supervised. If the limit is reached or if an overflow occurs, the user receives an alarm.

The flashing alarm key indicates the alarm. Press the alarm key to display the reason for the alarm.

Reaching the cost counter's limit

```
14. Apr. 12.20
ALARM(no) xxxx-xxxx METER LIMIT EXCEEDED
display                          return
```

```
14. Apr. 12.20
ALARM(no) xxxx-xxxx COUNTER OVERFLOW
display                          return
```

no.	States the number of the alarm.
xxxx-xxxx	States date and time. Format: Date-time, MMDD hhmm.

Acknowledge the alarm by pressing menu key F4 "ACK“.
In case of an alarm we recommend to read out or print all cost counters, and then to cancel them.
For more information see chapter CAPACITY.

Continuous updating of cost counters

ASB 150 02 guarantees that the information about longer – and thus more expensive – calls is not lost even in case of an unexpected power failure.

The accumulated call information is retrieved every 12 minutes by the cost counter. The cost counters keep up the stored information even during a power failure.

CAPACITY

Conversion factor

By means of a conversion factor call-metering pulses are converted into costs. A floating decimal point is used for the conversion factor.
The conversion factor consists of 1–4 characters, whereby also the floating decimal point is counted as a character.
Thus the range of the conversion factor is between .001 and 9999. The unit is costs/call-metering pulse.

Conversation time

The conversation time of a call is determined up to 18 hours 12 minutes and 15 seconds (65,535 seconds). (In case of longer calls the indication remains at this maximum value.)

Call-metering pulses

Current call

Up to 65,535 call-metering pulses are counted during a call.

Total memory

The total memory for call-metering pulses counts up to 2^{24} (= 16,777,216) pulses. In case of an overflow the counter continues with 0.

Cost counter

Capacity and accuracy

Cost counters are presented including floating decimal points. The counter's capacity amounts to 2^{127} (= $1.7\ 10^{38}$). The counters for current cost display, last call charges and accumulated costs to callers and trunks contain 9 digits with 0–4 decimals.

In case of a high counter value indication, the cost unit is redefined, so that the number of characters does not exceed the available characters on the display and printout. (The following table uses "ATS" as abbreviation for a local currency.)

1 Kilo ATS	= 1 KATS	= 1,000 ATS
1 Mega ATS	= 1 MATS	= 1,000,000 ATS
1 Giga ATS	= 1 GATS	= 1.000,000,000 ATS

Limit for cost counter

In practice, the counter will hardly ever overflow. However, the accuracy of the counter decreases if the counter value indication for trunks or callers is already very high. If this is the case, it will not be changed by a cheap call.
In order to guarantee accuracy, you may determine a limit for the cost counter. If the limit is reached, the user receives an alarm.
The alarm indicates that the demanded accuracy is exhausted and that it is recommended to print (or read out) and cancel the counter. (The costs are further accumulated if the costs of individual calls may be gathered by the cost counter.)

The formulas below offer two approaches for definition of the cost limit.

- Formula for calculating the limit.
  Define your minimum requirements for the accuracy of the counters and use the formula for calculating the maximum cost limit.
- Formula for calculating the accuracy.
  Define the requested cost limit (e.g. based on average cost per month) and check, whether this cost limit gives you appropriate accuracy. Use the formula for calculating the accuracy for this check.

For calculation of the limit we use a formula containing the following variables:

L	cost limit for cost counter
Cmin	costs for the cheapest chargeable call
A	accuracy of cost display (e.g. 0.01 corresponds to an accuracy of 1 %)

Formula for calculating the limit

Given: the costs for the cheapest chargeable call Cmin and the requested accuracy of the cost counters A.

The cost limit is calculated by the following formula

$$L = 360\ 10^6 * Cmin * A$$

Example:

The cheapest chargeable call costs 0.80 ATS (= Cmin). The requested accuracy may be 1 % (A = 0.01). What is the maximum limit of the cost counters?

$$L = 360\ 10^6 * 0.80 * 0.01 = 2{,}880{,}000$$

Result: the cost limit shall be < 2.88 million ATS.

Formula for calculating the accuracy

Given are the costs for the cheapest chargeable call Cmin and the requested cost limit L.

The accuracy of the cost counters is calculated by the following formula

$$A = L / (360\ 10^6 * Cmin)$$

Example:

The cheapest chargeable call costs 0.80 ATS (= Cmin). The requested cost limit is 100,000 ATS (= L). What is the accuracy of the cost counters A?

$$A = 100{,}000 / (360–10^6—0.80) = 0.00035$$

Result: the accuracy of the cost counters at reaching the limit is at least 0.04 %.

LIMITATIONS

Change of directory numbers

The cost counters have to be cancelled before directory numbers of extensions, trunks or tie lines are changed.

Cost information about trunk lines

If digital trunks make available information in the form of costs, these costs are not reconverted into pulses. In this case, the total of costs not necessarily corresponds to the total of call-metering pulses.

Last call charges in case of printout and reset

The user will read out or print the contents of cost counters before resetting the cost counters. To guarantee that during that time no costs are lost, the cost counters are not updated during that period.

The same holds true for the period between print order and confirmation of reset.
The costs accumulated during this period are stored in the last call charges memory. If a user has two short calls during this period, it is possible that the last call charges memory displays the sum of two or more calls.

Restart

The last call charges memory is cleared after restart (e.g. power failure).

PROGRAMMING

Date and time

The following commands are only accessable via the telephone:

In order to have the correct date on the printout, use the following commands if the date on the display of the system telephones does not match.

6101
Set year month day

```
14. Apr. 12.20
SET YEAR MONTH DAY  6101              >
backward  forward                 return
```

Press Enter

Enter the date: Format: YYMMDD

6102
Day of week 1 = Sunday

```
14. Apr. 12.20
DAY OF WEEK 1=SUNDAY  6102            z
backward  forward                 return
```

z Enter day of week.
- 1 Sunday
- 2 Monday
- 3 Tuesday
- 4 Wednesday
- 5 Thursday
- 6 Friday
- 7 Saturday

6103
Set hour minute second

```
14. Apr. 12.20
SET HOUR MIN. SEC.   6103            >
backward  forward                 return
```

Press Enter

Enter time: Format: hhmmss

6104
12h mode, display

You may enter the time in 12- or 24-hour-mode. (Independent of this programming, entering the time at a telephone is always done in the 24-hour mode, e.g. at wake-up call, reminder, setting of time.)

```
14. Apr. 12.20
12 H,DISPLAY MODE   6104             z
backward  forward                 return
```

z Enter the relevant function:
Y= 12-hour mode
N= 24-hour mode

Type of call metering

The following commands are only accessable via RASC:

1029
Tenant group

With this command we assign a tenant group is assigned to a trunk. The value of the tenant groups ranges between 0 and 15.

The trunk tenant group is used for cost calculation for outgoing calls.

1501
Initiation of call meters

This command states whether call-metering pulses shall be received. The function call metering necessitates that (1) the analogue trunk is equipped with call meter receivers or (2) the signal diagram of the digital trunk includes the function call metering.

1502
Tariff number

This command defines the call-metering tariff number for the specified trunk.

Values: 0-5, not programmed
Default: not programmed

1503
Carrier number

This command defines the carrier number wired to the specified trunk.

Values: 0-7
Default: 0

Type of call meter receiver and level

1607
Call meter type

This command states the type of the call meter receiver (12 kHz or 16 kHz). Call metering with 50 Hz call meters and a digital trunk is not affected by this command.

1608
Call meter receiver level

Command 1608 is valid for call meter receivers CM 16 (ROA 219 5062/1) and CM 12 (ROA 219 5062/2). This command states the minimum level for recognition of call-metering pulses.

1614
Call meter (CML) receiver level

The command is valid for call meter receiver CM 12/16 (with CML circuit ROA 219 5135/1). This command states the minimum level for the recognition of call-metering pulses.

Time setting

1405
Wait time before metering is stopped

This command states for how long the call meter receiver will remain active after the release of the trunk.

1418
Minimum time for detection of call metering pulses

This command states the minimum duration of call-metering pulses.

Call metering

6204
Log sent digits?

The dialled digits in case of call metering may differ from those sent if Least Cost Routing is used. With this command it can be defined which digits you want to have logged. This definition applies for all formats except the CIL2 format.
Set the command 6204 to "YES" if you want to log the sent digits.
Set the command 6204 to "NO" if you want to log the dialled digits.

The following commands are accessable via RASC and the telephone:

6710
Currency identifier

```
14. Apr. 12.20
Currency identifier   6710          zzz
backward  forward                 return
```

zzz Enter abbreviation of the desired currency identifier (e.g. ATS, DM or SEK).

6711
Decimals in cost

States the number of decimals.

```
14. Apr. 12.20
DECIMALS IN COST   6711               z
backward  forward                 return
```

z Enter number of decimals

(possible values 0-4)

6712
Currency identifier last?

States whether the local currency shall be displayed and printed after or before the costs.

```
14. Apr. 12.20
CURRENCY IDENTIFIER LAST?  6712       z
backward  forward                 return
```

z Enter value
Y=Currency identifier after the costs
(e.g. 0.80 ATS)
N=Currency identifier before the costs
(e.g. ATS 0.80)

6713
Cost limit

This command determines the limit of the cost counters. An alarm informs the user when the limit is reached.
The determination of the limit guarantees the cost counters' accuracy. For calculation of the limit, see section "Capacity", chapter "Cost counter".

```
14. Apr. 12.20
COST LIMIT        6712                >
backward  forward                 return
```

Press Enter

Enter cost limit (max. 9 digits including decimals)

6720
Password system

This command states the password for the superuser. With function code * 45 # and this password, you have access to the costs of other callers and trunk lines.

```
14. Apr. 12.20
PASSWORD SYSTEM     6720              >
backward  forward                 return
```

Press Enter

Enter password (1–10 digits).
use characters 0–9, * and #.

Conversion factor

The following formulas can be applied for the respective input data:

Input data: not programmed

Cost calculation will be done for carrier 0 and tenant 0 with the following formula:

- for analogue or ISDN line interface:
  cost = given pulses * multiplication factor
  (multiplication factor = value programmed within the command 8424)
- for ISDN AOC (digital line interface)
  cost = received cost

Input data: value between 0 and 5

Cost calculation will be done for appropriate carrier/ tenant with the following formula:

- for analogue or ISDN line interface:
  cost = given pulses * multiplication factor * tariff cost/pulse
  (multiplication factor = value programmed within the command 8424)
  (tariff cost/pulse = value programmed within the commands 8430-8435)
- for ISDN AOC (digital line interface)
  cost = received cost

To define the costs for a call metering pulse, the following commands have to be set.

***84**
Carrier definition menu

Normally this menu is used in conjuction with Least Cost Routing in order to create or alter the carriers. (see separate description). In the future different conversion factors to different carriers are planned. For the time being, please use only carrier 0 for call metering.

8401
Internal access code

This command is only used for Least Cost Routing. In case of call metering set the carrier to "0".

8420
Carrier open for tenant

This command is only used for Least Cost Routing. In case of call metering open the carrier 0 for tenant 00. (for command 8420 put OPEN = YES).

8424
Pulse cost metering

This command states the costs for a call-metering pulse per tenant group.

```
14. Apr. 12.20
PULSE COST METERING   8424      x
backward  forward               return
```

Press Enter

x Enter the carrier number (0-7); in the CM case enter always "0".

```
14. Apr. 12.20
TENANT NUMBER       C 8424      0     zz
backward  forward     c/i       return
```

Press Enter

zz Enter the tenant number (0-15)

```
14. Apr. 12.20
PULSE COST METERING   C 8424     0   00>
backward  forward        c/i    return
```

Press Enter

```
14. Apr. 12.20
                                8424    0 00
                                        return
```

Enter the cost per pulse

Enter a maximum of 4 characters including decimal point

To enter the decimal point, use the key *

8430-8435
Customer tariff (cost per pulse)

This commands define the cost for a call metering pulse for trunks which have an assigned tariff number within command 1502.

command	tariff	cost/pulse
8430	0	default (0)
8431	1	default (0)
8432	2	default (0)
8433	3	default (0)
8434	4	default (0)
8435	5	default (0)

The required value for cost/pulse can have a length of 10 digits including the decimal point.

Facility access COS

Facility access COS determines the access to features. You may define COS for the groups 0–15.

3075
Read own meter?

COS to display own cost counter.

```
14. Apr. 12.20
READ OWN METER?   3075    xx         z
backward  forward    c/i        return
```

xx Enter facililty category (0-15)

z Enter the relevant function
Y= Read out allowed
N= Read out not allowed

3076
Read other meter?

COS to display other cost counters.

```
14. Apr. 12.20
READ OTHER METER?   3076   xx         z
backward  forward    c/i        return
```

xx Enter facililty category (0-15)

z Enter the relevant function
Y= Read out allowed
N= Read out not allowed

3077
Print other meter?

COS to print other cost counters.

```
14. Apr. 12.20
PRINT OTHER METER?   3077  xx         z
backward  forward    c/i        return
```

xx Enter facililty category (0-15)

z Enter the relevant function
Y= Print out allowed
N= Print out not allowed

3078
Reset other meter?

COS to cancel other cost counters.

```
14. Apr. 12.20
RESET OTHER METER?   3078  xx         z
backward  forward    c/i        return
```

xx Enter facililty category (0-15)

z Enter the relevant function
Y= Reset allowed
N= Reset not allowed

COS for individual extensions

0101
Facility COS

An extension that is authorized to use call metering functions must have a facility category that includes all the commands mentioned above.

```
15 Apr 14:40   +15°
FACILITY COS          0101 xxxx       zz
 backward  forward     c/i      return
```

xxxx Enter extension's directory number

zz Enter the relevant facility category (0 - 15)

0146
Meter information allowed?

Does own extension or do other extensions have the COS to display or print metering information?

This command controls the access to the functions "Display own costs“, "Display costs to other callers and trunks“, "Current call information“ and "Last call charges“. In addition, with this command it is possible to exempt extensions from total printout.

```
15 Apr 14:40   +15°
METER INFO ALLOWED?      xxxx        z
 backward  forward     c/i       return
```

xxxx Enter extension's directory number

z Enter the relevant function
Y= Meter info allowed
N= Meter info not allowed

0147
Type of metering information

This command states the type of the call information during the call.

```
15 Apr 14:40   +15°
TYPE OF METER INFO?      xxxx        z
 backward  forward     c/i       return
```

xxxx Enter extension's directory number

z Enter the relevant function
0 No call information (function out of operation)
1 Display of conversation time
2 Display of call-metering pulses
3 Display of costs in local currency.

If the demanded display is not available for some reason or other, the next type of display is automatically used (e.g. pulses instead of costs).

0148
Automatic display of metering information?

This command states whether call information is automatically displayed at call set-up. Independent of this command, the function call information may be activated or deactivated by pressing one of the menu keys.
At the next call, call information again is displayed according to the setting of command 0148.
This command can also be influenced by the user by dialling the code *41#
(see Call information during the call)

0151
Tenant group

This command states the Tenant Group of the extension.

```
15 Apr 14:40   +15°
TENANT GROUP          0151   xxxx        yy
 backward  forward     c/i           return
```

xxxx Enter extension‘s directory number

yy Enter tenant’s group number

Summary of COS

The following table shows the COS that are necessary for the features. The character "–“ means that the value of the command is irrelevant for the feature.

Function	3075	3076	3077	3078	0146	0147
Current information						
None	-	-	-	-	-	0
Duration	-	-	-	-	-	1
Pulses	-	-	-	-	-	2
Costs	-	-	-	-	-	3
Last call charges	Y	-	-	-	Y	-
Display own costs	Y	-	-	-	Y	-
Display all costs	Y	Y	-	-	Y	-
Printout	Y	Y	Y	-	Y	-
Reset individual	Y	Y	-	Y	Y	-
Reset a group	Y	Y	Y	Y	Y	-
System check	Y	Y	-	Y	Y	-
Exception from display and printout	-	-	-	-	N	-

Alarm key

To receive information on alarms, program a name selection key by means of code * 91 #.
See "NAME SELECTION",
document 360/155 34-ASB 150 02 Uen.

Settings of the port

The following commands are only accessable via RASC:

6701
I/O Port

With this command the numbers of the printed circuit board and the I/O port for total printout are entered.

6006
Device type

This command informs ASB 150 02 about the type of the connected device.

***6007 Character set**

This command permits changes of the character set defined by command 6006.

6009
Baud rate

This command states the transmission speed for the interface.

6011
Auto select allowed?

This command states whether the interface may also be automatically selected by other features, e.g. for printout of directory. Enter "NO" for this command.

Settings for printout format

The following commands are only accessable via the telephone and RASC:

6702
Lines/page

This command states the lines per page.

```
15 Apr 14:40   +15°
LINES/PAGE         6702            zzz
 backward  forward                return
```

zzz Enter Lines / Page

6703–6706
Printout header 1–4

Commands 6703–6706 determine the headers of the metering printout.

6703 Printout header 1

6704 Printout header 2

6705 Printout header 3

6706 Printout header 4

```
15 Apr 14:40   +15°
PRINTOUT HEADER 1    6703             >
 backward  forward                return
```

Press Enter

Enter the relevant text (max. 40 characters).

EQUIPMENT

Call meter receiver

The call meter receivers are designed as daughter boards CM of BTU-A or are integrated in the layout of the BTU-A2.

A printed circuit board CM contains call meter receivers for 2 trunk lines.

Printout

Printout necessitates one V 24 port and one printer. The V 24 ports of the CPU-D2 (CPU-D) or the AUX2 (AUX) may be used for connection of the printer.

System telephones

The accumulated costs may be displayed at authorised extensions.
Display and printout of metering information is supported by the following system telephones:

Telephone	Running cost indication	Last call charges	Display own	Display and printout all
DBC 214	N	Y	Y	Y
DBC 213	Y	Y	Y	Y
DBC 212	Y	Y	Y	N
DBC 663	N	Y	Y	Y
DBC 662	Y	Y	Y	Y
DBC 631	Y	Y	Y	N
DBC 754	N	Y	N	N
DBC 753	Y	Y	N	N

FECU

Multiple tariff handling is protected by the FECU. Without FECU, costs are only calculated for carrier 0 and tenant 0 with the following formula:

- for analogue or ISDN line interface:
  cost = given pulses * multiplication factor
  (multiplication factor = value programmed within the command 8424)
- for ISDN AOC (digital line interface)
  cost = received cost

Furthermore, a FECU warning is generated.

For detailed description see Facility Description - General, document 155 34-ASB 150 02 Uen.

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
SEA/TB/MP M.Plattner	SEA/TB/XE	142/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved	Kontr/Checked	Datum/Date / Rev	Tillhör/Referens-File/Reference
SEA/TB/MP		98-01-26 / B	ASB 150 02
		Database reference	
		142.fm	

CALL PICK-UP - COMMON

Definition

Common call pick-up function means that calls to a common directory number can be signalled on all or a group of extension telephones. The call can be answered by any extension by depression of a programmed key.

A call to a busy common call pick-up function will be camped automatically on to a selected fictive directory number.

Use

The function can be used when a number of extensions shall commonly answer a certain type of call or certain number of trunks.

The function can also be used in conjunction with night service if it shall be possible to signal incoming external traffic on all programmed extension telephones.

Operation

Incoming calls

A call to a common call pick-up group is signalled by rapid flashes on the programmed supervision pick-up lamp of all extension telephones that are members of the group.

Answer

A call is answered as follows:

- Press flashing supervision-key.

  If several unanswered calls exist, the system selects call that is first in camp on queue.
  On depression of supervision key, the call will be moved to **Line 1**, **Line 2** (not available on the BASIC Telephone) or **Inquiry**.

  If no more calls exist to the common call pick-up the group call lamp will extinguish, otherwise call indication continues.

  On answer, telephone with display receives information relevant to caller (second row) and fictive number (top row):

EXECUTIVE telephone

```
GROUP                    123
EXTERNAL                 704   SPEECH
```

STANDARD telephone

```
GROUP          123
EXTERNAL       203   S
```

NOTE: If the answer key is pressed when no call exist congestion tone will be received.

If the directory number is dialled when no call exists, a call to the answering group takes place whereby all extensions with answer keys will be called.

Capacity

The number of supervision functions is limited only by the number of available programmable keys.

The number of fictive directory numbers is 16.

Limitations

To be able to answer a call on an answer key at least one of the traffic functions **Line 1**, **Line 2** (not available on the BASIC Telephone) or **Inquiry** must be free.

Programming

This command is only accessable via RASC:

5409
Create a fictive directory number

It is possible to define "fictive directory numbers" in ASB 150. The fictive directory number facility means that all calls to the number are queued. If there is a call queue, this is indicated on all telephones that have a programmable key for monitoring the fictive number.

With this command a fictive directory number with a stated number can be created.

The facility can be assigned to any free directory number not conflicting with existing directory numbers.

ASB 150 permits a maximum of 16 fictive directory numbers.

5509
Delete fictive number

With this command a fictive directory number can be deleted.

5612
Alter fictive number

With this command a fictive directory number can be changed. If you want to change the number to a new number that is in conflict with the old number, this cannot be done directly. In such cases first change to a random free number and then change to the desired number.
However, references to previous numbers will remain. These references are deleted or substituted by the new number. See description of command group 56 listing commands referring to directory numbers. If no number is indicated, an error message will be shown, since the directory number is the only identity of the fictive number, and consequently there has to be a directory number.

1101 - 1104
Programming of answer position for trunks

To obtain a common call pick-up function those trunks that are to be answered shall be assigned a fictive directory number as answer position.

```
10 Jul 14:40   +15°
ANSWERING POS.DAY     1101 xxxx     zzzz
 backward  forward     c/i       return
```

xxxx	Enter trunks' directory number
zzzz	Enter fictive directory number. Repeat the procedure for commands 1102 - 1104 if so required.

0301
Programming of group members

Each extension that is to be a member of the common call pick-up group must program a key for supervision of the answering position's fictive directory number.

```
10 Jul 14:40   +15°
FUNCTION OF KEY       0301 xxxx yy    zz
 backward  forward     c/i       return
```

xxxx	Enter extension's directory number
yy	Enter relevant key (00 - 48)
zz	Enter relevant function = 13. Step to command 0302

0302
Program directory number

```
10 Jul 14:40   +15°
ASSOCIATED NUMBER     0302 xxxx yy  zzzz
 backward  forward     c/i      return
```

zzzz — Enter fictive directory number that is to be intercepted.

Step to command 0303.

0303
State ring type

```
10 Jul 14:40   +15°
RINGING ALTERNATIVE   0303 xxxx yy     z
 backward  forward     c/i      return
```

z — Enter relevant ring type (0 - 4)

Individual programming

Answer positions equipped with BASIC-, ECONOMYplus- , STANDARD- or EXECUTIVE telephones can themselves program an answer key.

See document FACILITY DESCRIPTION (155 34-ASB 150 02 Uen).

Equipment

BASIC-, ECONOMYplus- , STANDARD- or EXECUTIVE telephone.

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
SEA/TB/MP T.Preißner	SEA/TB/XE	143/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved: SEA/TB/MP	Kontr/Checked	Datum/Date: 98-01-26	Rev: B
		Tillhör/Referens-File/Reference: ASB 150 02	
		Database reference: 143.fm	

CALL PICK-UP - EXTENSION GROUP

Definition

Call pick-up extension group (answer by any extension that is a member of the group) denotes a group of extensions whose members, by dialling a special answer code, can pick up a call ringing at another group member.

Use

A call pick-up extension group can be used when a group of extension users perform similar duties.

Any extension in the group can then answer calls to other extensions in the group. The function is intended in particular for those applications for which it is not desirable to designate a key for every other extension in the group.

See also facility description SUPERVISION, document 463/155 34-ASB 150 02 Uen.

Operation

All telephones

If you identify a call to another extension in the group, you can pick up the ringing call by calling the answer code on your own telephone:

- Lift handset
- Dial digit for answer (normally **8**).
  Answering party gains speech connection with caller and ring signals at first called extension cease

Display information

On a telephone with display, the following message is obtained on answer:

- Row two of the display shows conversation partner
- Top row shows first-called extension

EXECUTIVE Telephone

```
SMITH JOHN                  124
JOHNSON ANDREW              203  SPEECH
```

STANDARD Telephone

```
SMITH J      124
JOHNSON A    203  S
```

If the answer code is dialled when no ringing call exists, congestion tone will be heard.

Capacity

The maximum permitted number of answer groups is 16.

The maximum permitted number in each group is 20.

Limitations

Only calls that ring on **Line 1** or **Line 2** can be picked up.

If more than one extension in the group has an unanswered call one of the calls will be picked up on an arbitrary basis.

Calls can be picked up irrespective of the answering extension's category.

In order to prevent this, contact your supplier.

Each extension can be member of an optional number of groups.

Programming

Following commands are only accessable via RASC:

5405
Create pick up code

The facility is created by programming the desired answer (pickup) code. This answer code is common to the whole system, regardless of how many groups have been programmed.

5406
Create pickup group

In ASB 150 a call pickup group is formed from a list of extensions. In case of a call to a member of the group another member can answer the call from his/her own telephone by dialling the digit for "group call pickup".

A new group for group call pickup can be created via this command.
ASB 150 permits a maximum of 16 of these groups.

5505
Delete group call pick up

The facility can be erased by erasing the answer (pickup) code via command.
Note that this command also erases all answer groups.

5506
Delete pickup group

An existing group can be erased via this command.

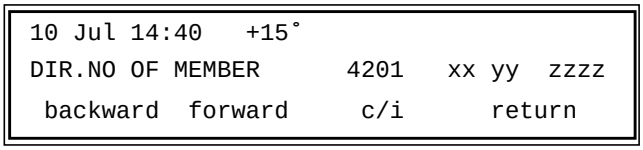
5614
Alter group call pickup no.

Altering an existing answer code requires programming.

Following commands are accessable via RASC and the Telephone:

4201
State members in group

Extensions that are to be members of the group need to be programmed accordingly.



xx	Enter group number (0 - 15)
yy	Step to relevant position (0 - 19)
zzzz	Enter member's directory number

Use the **-** -key to erase an existing directory number.

Equipment

None.

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
SEA/TB/MP T.Preißner	SEA/TB/X	144/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved: SEA/TB/MP	Kontr/Checked	Datum/Date: 98-01-26 Rev: A	Tillhör/Referens-File/Reference: ASB 150 02
		Database reference: 144.fm	

CALL PICK-UP - INDIVIDUAL

Definition

The possibility to answer an internal or external ringing call from any telephone (extension).

Use

Allows an extension user, from his own telephone, to pick up a call to a colleague's telephone.

Operation

All types of telephone

For a call to another telephone's directory number:

- Dial directory number of the extension where the call is ringing
- On receipt of busy tone dial requisite postdialling digit (normally **6**).
  Speech connection is established with caller.
  Ringing to original extension ceases.

EXECUTIVE telephone

The display shows:

EXECUTIVE telephone

```
10 Jul 14:40   +15°
JOHNSON ANDREW            203  BUSY
call-back  camp-on   pick-up  intrusion
```

On depression of **pick-up** the ringing call is picked up.

EXECUTIVE - and STANDARD telephones

After pick up the display shows

EXECUTIVE telephone

```
SMITH JOHN                205
JOHNSON ANDREW            203  FREE
```

STANDARD telephone

```
SMITH J      205
JOHNSON A    203  F
```

The top row shows from whom the call was picked up.

The second row shows the connected party.

Capacity

Not applicable.

Limitations

Only calls that ring at the extension (**Line 1** and **Line 2**) can be picked up.

On answer no authorisation check is made in the traffic group matrix.

This means that the user can pick up any call even those that are normally blocked and not through-connected.
To prevent this, the system has to be reprogrammed.

Programming

2403
Call pick-up

If a user hears a call ringing at another extension, he may answer the call at his/her own extension by dialling the ringing extension's number followed by a digit after the busy tone has been received.

This command determines the digit to be used for call pickup.

Equipment

None.

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
SEA/TB/MP T.Preißner	SEA/TB/XE	145/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved	Kontr/Checked	Datum/Date / Rev	Tillhör/Referens-File/Reference
SEA/TB/MP		97-10-31 / B	ASB 150 02
		Database reference	
		145.fm	

CALL WAITING INDICATION

Definition

When a call is camped on to a busy extension, the latter receives a call waiting signal in the form of a muted tone signal or tone bursts as indication that a call is waiting.

Use

The call waiting indication informs the busy extension that further calls are waiting to be answered.

Operation

ECONOMY -, STANDARD - and EXECUTIVE telephones

Any number of calls can be camped-on to these system telephones.

Waiting calls are signalled with a muted ring signal.

To answer more waiting calls requires **Line 1** or **Line 2** to be made free by parking the ongoing call or transferring it to another party.

Immediately after either **Line 1** or **Line 2** becomes free the call that has been camped-on longest will seize this traffic function and be signalled as a call. The associated lamp flashes to confirm the new call.

BASIC telephones

When a call waiting indication is heard the extension can end the ongoing call.

- The call that has been camped on longest will now ring at the extension
- The camped on party hears ring control tone.

ANALOGUE telephones

When a call waiting indication is heard the extension can either end the ongoing call or ask his conversation partner to hold on for a moment.

The extension ends the ongoing call

- The call that has been camped on longest will now ring at the extension
- The camped on party hears ring control tone.

The extension parks the ongoing call

- The extension presses the **R**-button
- When dial tone is heard, the extension goes on hook.
  The conversation partner is now camped on at the head of the queue.
  The extension is now called by the previously camped on call and, on answer, speech connection is established.
  The procedure utilising camp-on to own number can be repeated an unlimited number of times.

Capacity

The number of camp-ons to each individual extension is unlimited.

The camped on calls are placed in a queue and handled in order of arrival.

Limitations

Camp-on takes place only to a busy extension.

If the extension is free on **Line 2** any new call will always be presented on this line.

Camp-on to an analogue telephone results in the busy extension receiving two tone bursts in her/his receiver.

Programming

0108
Camp-on allowed

Each extension can be blocked to prevent camp-on of calls to the extension

```
10 Jul 14:40   +15˚
CAMP ON ALLOWED ?     0108 xxxx        z
 backward  forward     c/i      return
```

xxxx	Enter extension's directory number
z	Enter required function: Y = Camp-on permitted (default data). N = Camp-on forbidden

0124
Call waiting tone to analogue extension

For an analogue extension to be able to receive call waiting tone the following needs to be programmed.

```
10 Jul 14:40   +15˚
CALL WAITING TONE ?   0124 xxxx        z
 backward  forward     c/i      return
```

xxxx	Enter analogue extension's directory number
z	Enter required function: Y = Call waiting tone is supplied. N = Call waiting tone is not supplied (default data)

The following command is only accessable via RASC:

2029
Programming of call waiting tone

There are two ways for indicating call waiting towards analogue extension:

- Value "no" gives a short tone each time a new call is put in the queue.
- Value "yes" gives a continous tone as long as there are calls waiting.

Equipment

None.

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
SEA/TB/MP T.Preißner	SEA/TB/X	146/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved: SEA/TB/MP	Kontr/Checked	Datum/Date: 98-01-26	Rev: A
		Database reference: 146.fm	Tillhör/Referens-File/Reference: ASB 150 02

CAMP ON - INCOMING EXTERNAL TRAFFIC

Definition

Incoming external traffic to a busy individual answering position will be camped on to the answering position automatically.

Use

The function is used for common answer and to queue calls when a normal extension is used as answering position for incoming external traffic.

The calling trunks are camped on to the answering position and are presented in the order of arrival.

Function

An incoming call to a busy extension that is open for camp on will be camped on automatically.

The caller will hear ring control tone from the public exchange until the call is answered or he tires of waiting and goes on hook.

The called extension hears, if no other type of ringing is supplied, the call waiting indication as a short muted tone burst as indication that further calls are waiting.

An analogue telephone receives two tone bursts as camp on indication.

If the answer position is blocked for camp on subsequent calls will be presented only on programmed external line keys.

If the identified answering position does not answer the call within a certain time, the call will be diverted to the alternative answering position.

Capacity

The number of camp-ons to an individual directory number is unlimited.

The calls are queued in the order of arrival.

Limitations

Camp on is not possible if:

- The busy extension has a category that prevents camp on
- The traffic group matrix forbids interconnection of the parties
- The trunk is programmed for diversion to an alternative answering position when the normal answering position is busy.

Programming

0108
Camp on allowed

If camp on to an extension is to be prevented the extension must be assigned this category

```
10 Jul 14:40   +15°
CAMP-ON ALLOWED       0108 xxxx        z
 backward  forward     c/i      return
```

xxxx	Enter extension's directory number
z	Enter relevant function: Y = Camp on permitted (default data). N = Camp on forbidden

Equipment

None.

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
SEA/TB/MP T.Preißner	SEA/TB/X	147/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved: SEA/TB/MP	Kontr/Checked	Datum/Date: 98-01-26	Rev: A
		Tillhör/Referens-File/Reference: ASB 150 02	
		Database reference: 147.fm	

CAMP ON - INQUIRY

Definition

An extension who, on inquiry, encounters busy tone, can camp the latest individually parked party on to the busy extension, via a transfer request.

Use

Allows an OPERATOR equipped with an EXECUTIVE telephone or other extension to extend calls even if the called party is busy. This enables the extending party to go free and answer new calls.

Operation

ECONOMY -, STANDARD - and EXECUTIVE telephones

An extension connected to an external party initiates inquiry to an internal party.

If the inquirer receives busy tone, the external call can be camped on to the busy extension as follows:

- Press **Transfer**
- Lamps for both parked and called parties extinguish.
  The display shows idle information provided no other calls are parked

The camped on party receives music on hold or silence.

See also facility description CALL WAITING INDICATION, document 145/155 34-ASB 150 02 Uen.

The party who receives the camp on hears a short ring burst (analogue telephone two short tone bursts in handset).

If camp on is forbidden, depression of the **Transfer**-key will be ignored.

BASIC - and ANALOGUE telephones

An extension connected to an internal party initiates inquiry to another internal party.

If the caller receives busy tone, the external call can be camped on to the busy extension as follows:

- By replacing handset, whereupon caller's telephone is free.
  Camped on party receives music on hold or silence

See also facility description CALL WAITING INDICATION, document 145/155 34-ASB 150 02 Uen.

If camp on is forbidden, the external party will recall the transferring extension.

Recall

If a camped on external call remains unanswered after a programmable time, the transferring party will be recalled.

NOTE: Camped on internal calls do not lead to recall.

See also facility description RECALL, document 440/155 34-ASB 150 02 Uen.

Capacity

The number of external calls that can be camped on to an extension is unlimited.

Limitations

Camp on cannot be undertaken if:

- The parties belong to different traffic groups that may not be interconnected
- The busy extension has a category that forbids camp on
- The extension has a facility category that forbids transfer before answer and camp on.

Programming

0108
Camp on allowed

An extension can be programmed individually to prevent camp on to the extension

```
10 Jul 14:40   +15˚
CAMP-ON ALLOWED ?     0108 xxxx        z
 backward  forward     c/i      return
```

xxxx	Enter extension's directory number
z	Enter relevant function: Y = Yes (default data). N = No

Equipment

None.

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
SEA/TB/MP T.Preißner	SEA/TB/XE	148/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved	Kontr/Checked	Datum/Date / Rev	Tillhör/Referens-File/Reference
SEA/TB/MP		98-01-26 / B	ASB 150 02
		Database reference	
		148.fm	

CAMP ON - INTERNAL CALLS

Definition

The possibility, to make a busy internal extension aware that a call is waiting.

Use

An extension that calls a busy internal party can, without effecting intrusion, make the busy party aware that a call is waiting.

Operation

All telephones

To order camp on

- Initiate normal call to another internal party. Busy tone is received
- Dial postdialling digit (normally "**4**"). Called party receives short muted ring burst. Caller encounters silence Analogue telephones receive call waiting tone in the handset.
- For extensions equipped with an EXECUTIVE telephone the menu key **camp-on** may be pressed to activate the camp-on function.

The display shows "WAIT or W" as an indication that the call is camped-on to the busy extension.

EXECUTIVE Telephone

```
10 Jul  14:40  +15˚
JOHNSON ANDREW             205  WAIT
```

STANDARD Telephone

```
10 Jul 14:40   +15˚
JOHNSON A    203  W
```

Called party answer

If the caller chooses to accept the call, he terminates the ongoing call whereupon he/she is rung by the camped on call provided that **Line 1** or **Line 2** is free.

The called party receives ring signal.

The camped on party now receives ring control tone and the call is now to be regarded as a normal internal call to a free extension.

The display shows:

EXECUTIVE Telephone

```
10 Jul  14:40  +15˚
JOHNSON ANDREW             205  FREE L2
```

STANDARD Telephone

```
10 Jul 14:40   +15˚
JOHNSON A    203  F2
```

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
		148/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved	Kontr/Checked	Datum/Date	Rev / Tillhör/Referens-File/Reference
		98-01-26	B

Capacity

All extensions have access to this facility.

Limitations

Several internal calls can be camped on to an individual extension.

Camp on to ECONOMY -, STANDARD - or EXECUTIVE telephones is only possible when the telephone is busy, that is the telephone is busy on both lines, otherwise the call is presented on **Line 2**.

Programming

This command is only accessable via RASC:

2401
Camp on

Altering the postdialling digit

If a postdialling digit other than "4" is to be used this must be redefined.

Equipment

None.

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
SEA/TB/MP S. Caushi	SEA/TB/X	149/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved	Kontr/Checked	Datum/Date / Rev	Tillhör/Referens-File/Reference
SEA/TB/MP		98-01-26 / A	ASB 150 02
		Database reference	
		149.fm	

CATEGORISATION

Definition

Categorisation of extensions and trunks enables them to be assigned various traffic possibilities. Categorisation is achieved via system programming.

Use

Via categorisation extensions can be assigned precisely those functions and facilities which they require to perform their tasks.

Operation

If an extension user initiates an action for which a category has been defined, the category of the relevant extension or trunk will be consulted.

If the measure is permitted according to categorisation the requested function will be activated.

If the action is not permitted, congestion tone (where appropriate) will be issued or the action will be ignored.

Capacity

Each extension and trunk can be assigned the following types of categories.

Facility accessibility (A-category)

Extensions and trunks are assigned 1 of 16 programmable categories.

FACILITY ACCESS				
FUNCTION	A-CATEGORY			
	00	01	- -	15
1	Y/N	Y/N	- -	Y/N
2	Y/N	Y/N	- -	Y/N
3	Y/N	Y/N	- -	Y/N
n	Y/N	Y/N	- -	Y/N

Each facility category consists of a list of functions that are programmed as "YES" or "NO".
An extension or trunk that is assigned a certain category may use those functions that are set at "YES". These functions and facilities that can be given categories are listed in the table as functions 1 - n.

With the help of the table up to 16 categories can be created by stating permitted functions for these categories.

Categories that affect the called party (B-category)

With this category group it is possible to state whether the called party is open for any of the following functions.

- Callback is not permitted nor is it possible to send messages to directory number
- Intrusion on directory number is not permitted
- Camp on to the directory number is not permitted

Traffic group category

Each extension and trunk can be assigned 1 of 16 traffic group categories. See also facility description TRAFFIC GROUP MATRIX, document 484/155 34-ASB 150 02 Uen.

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
		149/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved	Kontr/Checked	Datum/Date	Rev / Tillhör/Referens-File/Reference
		98-01-26	A

Category for Trunk Call Discrimination (TCD-category)

Each extension can be assigned:

- 1 of 9 TCD-categories for day service
- 1 of 9 TCD-categories for night service

Upon programming the table it is determined which destinations are open.
See also facility description TRUNK CALL DISCRIMINATION, document 487/155 34-ASB 150 02 Uen.

Abbreviated number category

Each extension can be assigned one of four abbreviated number categories. This category determines which abbreviated numbers the extension shall have access to.
See also facility description ABBREVIATED NUMBER DIALLING - COMMON NUMBERS, document 101/155 34-ASB 150 02 Uen.

Limitations

Only directory numbers belonging to extensions, operators or trunks can be assigned categories.

Programming

All categories can be programmed per extension.

CATEGORY	COMMAND NO.
Facility COS	0101
Traffic group	0102
TCD-day COS	0103
TCD-night COS	0104
Common short no COS	0105
Callback allowed ?	0106
Break-in allowed ?	0107
Camp-on allowed ?	0108

Also trunks can be assigned categories:

CATEGORY	COMMAND NO.
Facility COS	1001
Traffic group	1002
TCD-day COS	1003
TCD-night COS	1004
Common short no COS	1005
Call back allowed ?	1006
Break-in allowed ?	1007
Camp-on answer position ?	1008

Facility category list

To determine the contents of each facility category it is necessary to program the table.

On system start all extensions and trunks belong to facility category 0.

3001 - 3091
Programming of facility category list

All facilities in the list are gathered in command group 30.

Each function can be opened for categories 00 - 15.

```
10 Jul 14:40   +15°
DAY/NIGHT COMMON      3001   xx       z
 backward  forward     c/i      return
```

xx Facility category (0 - 15)

z Y = Open for facility.
N = Blocked for facility

The following facilities can be programmed in the list:

COMMAND NO.	DEFAULT DATA	FACILITY
3001	N	Day/night initiation
3002	Y	Transfer before answer ?
3003	Y	System programming ?
3004	N	Intrusion ?
3005	Y	Conference ?
3006	N	Voice paging group 0 ?
3007	N	Voice paging group 1 ?
3008	N	Voice paging group 2 ?
3009	N	Voice paging group 3 ?
3010	N	Voice paging group 4 ?
3011	N	Voice paging group 5 ?
3012	N	Voice paging group 6 ?
3013	N	Voice paging group 7 ?
3014	N	Send messages for others ?
3015	Y	Send voice messages ?
3016	Y	Send text messages ?
3017	Y	Send call me message ?
3018	N	Give info for others ?
3019	Y	Give voice info ?
3020	Y	Give text info ?
3021	Y	Give predefined info ?
3022	N	Day/night system
3023	N	Day/night trunk group 1
3024	N	Day/night trunk group 2
3025	N	Day/night trunk group 3
3026	N	Day/night trunk group 4
3027	N	Day/night trunk group 5
3028	N	Day/night trunk group 6
3029	N	Day/night trunk group 7
3030	N	Day/night trunk group 8
3031	Y	Program namecall ?
3032	Y	Program suffix digit ?

COMMAND NO.	DEFAULT DATA	FACILITY
3033	Y	Program external line ?
3034	Y	Program supervision ?
3035	Y	Program dedicated line ?
3036	Y	Program voice page ?
3037	Y	Program ACD-group ?
3038	Y	Program busy line 2 ?
3039	Y	Program conference ?
3040	Y	Program immediate answ. ?
3041	Y	Program ACD ready ?
3042	Y	Program **R**-key
3043	Y	Program account code ?
3044	N	Program ACD supervision ?
3045	N	Program ACD clerical ?
3046	N	Program ACD help ?
3047	N	Program operator hold ?
3048	Y	Program external voice mail ?
3049	N	Programm malicious call id ?
3050	N	Program number secrecy ?
3051	N	Program MLT key
3052	Y	Program common message ?

COMMAND NO.	DEFAULT DATA	FACILITY
3060	N	Room status view ?
3061	N	Check in/out ?
3062	N	Wake up ordering ?
3063	N	Wake up for others ?
3064	N	Paging ?
3065	Y	Common hold ?
3066	N	Return messages ?
3067	N	Control messages ?
3068	N	Print ACD statistics ?
3069	N	Reminder ordering ?
3070	N	Room to room bar ?
3071	N	External voice mail indication ?
3072	N	Silent intrusion ?
3073	N	Alarm extension ?
3074	N	Read alarm ?
3075	Y	Read own meter ?
3076	N	Read others meter ?
3077	N	Print others meter ?
3078	N	Reset others meter ?
3079	N	Malicious call id ?
3080	Y	Receive message ?
3081	N	Access to DISA allowed ?

COMMAND NO.	DEFAULT DATA	FACILITY
3083	N	Day/night ACd-group 0
3084	N	Day/night ACD-group 1
3085	N	Day/night ACD-group 2
3086	N	Day/night ACD-group 3
3087	N	Day/night ACD-group 4
3088	N	Day/night ACD-group 5
3089	N	Day/night ACD-group 6
3090	N	Day/night ACD-group 7
3091	N	Day/night ACD-group 8

NOTE: The following functions for programmable keys are not included in the Facility COS list as they shall always be individually programmable:

Transfer
Read&
Save Redial

Extensions barred for trunkline traffic

If certain extensions are to be barred from access to the public network these extensions must be given a traffic group category that is barred from access to the PSTN-trunkline group.This is done by programming the following commands:

0102 for the extensions that is to be barred

1002 for the trunklines that shall not be accessible.

The traffic group matrix must then be programmed to prevent the traffic in both directions between the extension group and the trunk group.

Command 2301-2315

In certain situations the traffic group control is overridden. To prevent this from happening the following commands are available:

2340
Traffic check at conference

This command states how the traffic group check should be executed for normal conference calls.

Alternatives:

- 0 = It is only necessary that the conference leader is open to call or receive calls from all parties in the conference.
- 1 = The conference leader has to be open to call or receive calls from all parties, and there must be at least one direction open between all other parties in the conference.
- 2 = The traffic group has to be open in both directions between all parties in the conference.
- 3-9 Reserved.

2341
Traffic check at operator conference

This command states how the traffic group check should be executed before an operator three-party connection is allowed.

Alternatives:

- 0 = It is only necessary that the operator is open to call or receive calls from all parties in the three-party connection.
- 1 = The operator has to be open in relevant directions to all parties and there must be at least one direction open between the other two parties.
- 2 = The traffic group has to be open in both directions between all parties in the three-party connection.
- 3-9 Reserved.

2342
Traffic check at call pick up

This command states how the traffic group check should be executed for

- individual call pickup
- group call pickup
- common call pickup

Alternatives:

- 0 = Always allowed, no traffic group control.
- 1 = The traffic group has to be open in at least one direction between the parties.
- 2 = The traffic group has to be open in both directions between the parties.

2343
Traffic check at break-in

This command states how the traffic group check should be executed at intrusion.

Alternatives:

- 0 = It is only necessary that the intruding party is open to call the busy extension.
- 1 = The intruding party is open to call the busy extension and must also be open to call or receive call from the third party.
- 2 = The traffic group has to be open in both directions between all parties before the intrusion is allowed.

Equipment

None.

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
SEA/TB/MP T.Preißner	SEA/TB/XE	150/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved	Kontr/Checked	Datum/Date / Rev	Tillhör/Referens-File/Reference
SEA/TB/MP		97-10-31 / B	ASB 150 02
		Database reference	
		150.fm	

CLOCK AND DIARY

Definition

The system contains a realtime clock that is used to state the time and date of various functions in the system.

Use

The clock in the system is used for the following functions:

- Reading of time and date on telephones with display
- To state time for CIL- (Call Information Logging) function
- Wake up in hotel system
- To block room-to-room traffic in hotel system at preprogrammed times
- For reminder facility, that is to call extension at programmed time
- Stamp sent messages with time and date that can be read off later
- In O&M-system stamp alarms with time and date
- Stamp alarms in the alarm centre function.

Operation

STANDARD - and EXECUTIVE Telephones

Date and time are shown on the top row of the STANDARD - and EXECUTIVE telephones' display.

The time can be displayed in the 24- or 12-hour mode.

24 hour mode

EXECUTIVE Telephone

```
10 Jul 14:40   +15˚
JOHNSON ANDREW             200
directory          redial     prog
```

STANDARD Telephone

```
10 Jul 14:40   +15˚
JOHNSON A    203
```

12 hour mode

EXECUTIVE Telephone

```
10 Jul 02:40 PM +15˚
JOHNSON ANDREW             203
directory          redial     prog
```

STANDARD Telephone

```
10 Jul 02:40 PM +15˚
JOHNSON A    203  F
```

Capacity

The time can be displayed in both the 24- and 12-hour modes. The diary takes into consideration the different number of days per month as well as leap years.

Limitations

The clock has battery backup and can withstand loss of power for up to 200 hours.

Programming

Programming via the Telephone

6101
To set date

```
10 Jul 14:40   +15°
SET YEAR MONTH DAY    6101            >
 backward  forward     c/i      return
```

Press **Enter**

```
10 Jul 14:40   +15°
               YYMMDD  6101
 backward  forward     c/i      return
```

Enter:

YY	year	(00 - 99)
MM	month	(01 - 12)
DD	day	(01 - 31)

6103
To set time

```
10 Jul 14:40   +15°
SET HOUR MINUTE SEC   6103            >
 backward  forward     c/i      return
```

Press Enter

```
10 Jul 14:40   +15°
               HHMMSS  6103
 backward  forward     c/i      return
```

Enter:

HH	hour	(00 - 23)
MM	minute	(00 - 59)
SS	second	(00 - 59)

6104
To set 24-/12-hour mode

For 12-hour mode the time is stated with AM and PM.

```
10 Jul 14:40   +15°
12 H MODE, DISPLAY    6104            z
 backward  forward     c/i      return
```

z — Enter relevant function:

Y = 12-hour mode.
N = 24-hour mode.
Default data = N

Programming via RASC

Time and date of ASB 150 02 can be syncronised to the PC via RASC.

The command "set clock" is stated in the pull-down menu "system" in the Aplication "maintenance".

Equipment

None.

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
SEA/TB/MP S.Caushi	SEA/TB/X	151/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved	Kontr/Checked	Datum/Date / Rev	Tillhör/Referens-File/Reference
SEA/TB/MP		98-01-26 / A	ASB 150 02
		Database reference	
		151.fm	

COMMON BELL

Definition

Common bell facility gives to all extensions the possibility to pick up the call from an extension that has been predefined as a common bell extension.

If the common bell feature is used in large working areas, it may be a good thing to use a mounted bell in connection with the common bell extension in order to attract everybody's attention.

Use

Common bell is similar to the function of the call pick up group, however the difference is that **all** extensions can pick up the common bell call.

The common bell extension used in small working areas can be that of the operator.

In the systems that already have an operator, the common bell extension can be the answer position of the off-duty operator.

Common bell extension can be programmed as a night answering position too.

Operation

All telephones

If a call is waiting at the common bell extension, **all** extensions of the system (operator included) can pick up this call by dialling a programmable common bell pick up code:

- Lift the handset (ANALOGUE or BASIC telephones)
- Dial the relevant common bell pick up code (default value ***73#**).
- The connection between the extensions will be established immediately and at the same time the common bell extension will be ready to treat the next call.

If two or more extensions try at the same time to pick up a call from the common bell extension, just the first one will pick it up. The other extensions will receive the "number unobtainable" tone. In addition to this tone, the extensions with display will show:

EXECTUTIVE telephone

```
10 Jul 14:40   +15°
NO CALL WAITING AT COMMON BELL
```

STANDARD telephone

```
10   Jul   14:40
NO CALL WAITING
```

The same situation will be faced if you dial the common bell pick up code and no calls are present at the common bell extension.

Capacity

One extension of the system can be defined as a common bell extension.

Limitations

An operator must not be defined as a common bell extension.

The code of the common bell, naturally must be different from those of the pick up groups.

The extensions that have no access to the common bell extension (prohibited by traffic group), can not pick up the common bell calls.

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
		151/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved	Kontr/Checked	Datum/Date	Rev / Tillhör/Referens-File/Reference
		98-01-26	A

Programming

Following commands are only accessable via RASC:

5629
Alter pick up code for common bell

This command gives the possibility to enter/change the common bell pick up code.

6901
Common bell extension

This command helps you to define or change the directory number of the common bell extension.

In order to reduce the time for dialling the common bell code, it is possible to program it on a function key.

Trunk answering position

1101
Trunk answering position at day

The command is used to determine the individual answering position for the trunk in a day-switched exchange. An individual answering position is selected by programming its directory number. If the directory number is erased, the individual answering position will be deleted.
Incoming calls are always presented on those system telephones on which the trunk is represented by a button. This applies irrespective of whether a directory number has been programmed as individual answering position.

1102
Trunk answering position at night

You can use this commands to define the common bell extension as an answering position at day or at night.

1103
Reroute position at day

The command is used to determine the rerouting position of the trunk in a day-switched exchange. To this position unanswered external calls i.e. parked calls, camped-on calls and transfer before answering are routed.
The rerouting position is determined by stating its directory number. The individual extension is removed by blanking out the current directory number.

1104
Reroute position at night

You can define the common bell extension as an reroute position at day or at night.

Following command is accessable via the telephone and RASC:

4001 Alternative answer position

As it has been mentioned in the USE-paragraph of this feature, the common bell extension can be defined as answering position of the off-duty operator. In this case the command **4001** can be used. You can program the operator's answering position via telephone set or it can be done via RASC

Programming via telephone set:

```
18 Sep 14:40   +15°
ALT.ANSWER POS    4001      zzzz
backward  forward   c/i   return
```

zzzz — Enter directory number of common bell extension.

Equipment

No need for additional equipment.

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
SEA/EBBMP C. Bertsch	SEA/EBBX/E	152/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved	Kontr/Checked	Datum/Date / Rev	Tillhör/Referens-File/Reference
SEA/EBBMP		99-07-15 / D	ASB 150 02
		Database reference	
		152.fm	

COMPUTER TELEPHONY INTEGRATION (CTI)

BusinessLink - General 2

BusinessLink for Novell 3

BusinessLink for Windows NT 11

BusinessLink - General

The BusinessLink (CTI-link) integrates PBX functionality with a computer environment. This can be any single stand alone PC or Netware environment. The link to the computer environment is based on a V.24 interface using a proprietary protocol which fulfils the functionality level of ECMA CSTA standard.

The user has the possibility to control the switch and request services through the PC or workstation without being physically connected to the switch. It allows the PC client to initiate processes on behalf of any user/ agent in the system and therefore, save time and increase productivity e.g. in call centre applications.

In other words the purpose of this interconnection is to carry status information about devices (extension line, trunk line, ACD group etc.) from the PBX to the computer and requests for telephony functions from the computer to the PBX.

BusinessPhone offers two different CTI-platforms:

- **BusinessLink for Novell (BL Novell)**
- **BusinessLink for Windows NT (BL NT)**

BusinessLink for Novell supports TSAPI for Novell's NetWare. The BL Novell uses a serial V.24-interface running with 9600 bps (19200 with R10 system software) to transfer the information between the exchange and the Telephony Server. The information exchanged via this interface is a proprietary one.

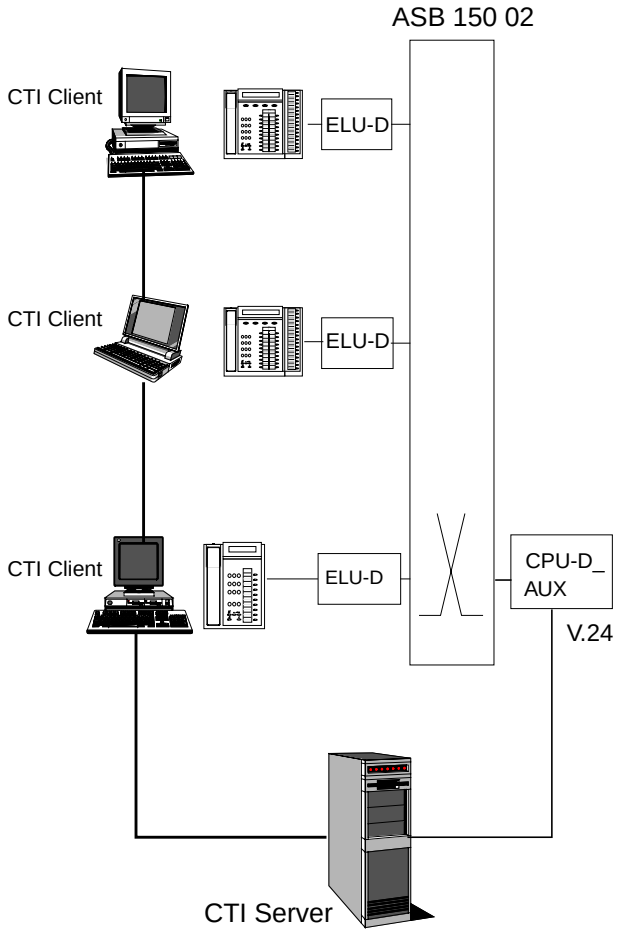
The conversion from our proprietary protocoll to TSAPI is done by a special NLM (Netware Loadable Module) running on the Telephony Server.

The CTI-client uses TSAPI connectivity over Novell Netware (3.x and 4.x) to communicate with the Telephony Server and thus also with the exchange.

BusinessLink for Windows NT supports TSAPI on Windows NT networks. The BL NT uses also a serial V.24-interface running on 19200 bps to transfer the information between the exchange and the Telephony Server. The information exchanged via this interface is a proprietary one.

The conversion from our proprietary signalling to TSAPI is done by a special Windows NT Service running on the Telephony Server (Windows NT machine).

The CTI-client uses TSAPI connectivity (CSTA.dll) over a Windows NT network (version 4.0 or higher) to communicate with the Telephony Server and thus also with the exchange. In the future, BL NT will also support TAPI clients.



Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
		152/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved	Kontr/Checked	Datum/Date	Rev / Tillhör/Referens-File/Reference
		99-07-15	D

BusinessLink for Novell

Definition

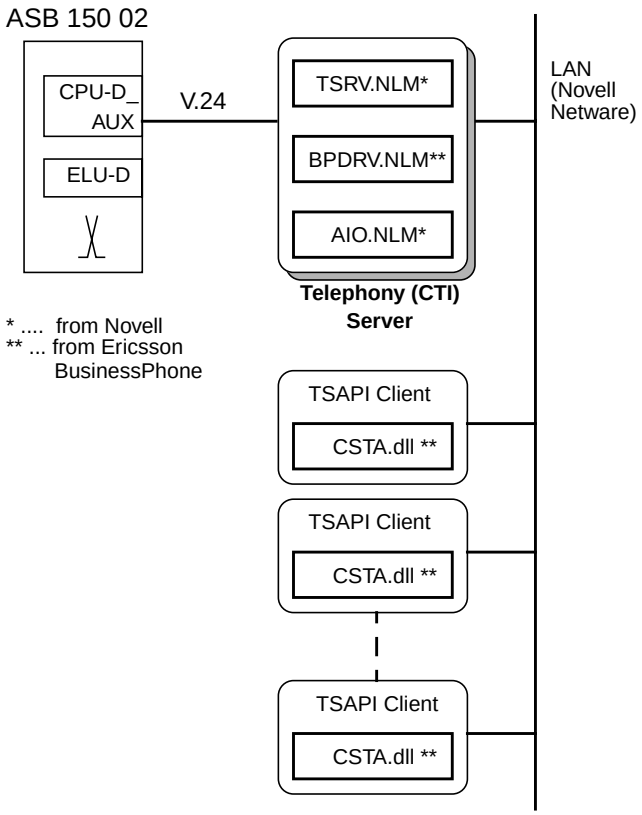
The BusinessLink for Novell (BL Novell) integrates PBX functionality with computer environment in a Novell network. The TSAPI clients will communicate with the PBX over a Telephony Server. The Telephony Server part consists of the two NLM form Novell (AIO.NLM and TSRV.NLM) and a BusinessPhone Driver (BPDRV.NLM). The connection between Telephony Server and PBX is a proprietary V.24 interface which fulfils the functionality level of ECMA CSTA standard.

Use

The CTI-link supports applications by providing the necessary information from and to the switch. It supports:

- application controlled routing of incoming and outgoing calls,
- call based data selection,
- screen based telephony,
- operation and maintenance,
- coordinated call monitoring

The user can configure the system and extension features from the PC or workstation. The same can be done for the call centre configuration.



Functions

The activity of the CTI can be summarized in four categories:

1- V.24 port handling

2- Monitors

3- Reports

4- Requests

CTI can distinguish between monitored CTI agents that offer the complete functionality of CTI, and not monitored CTI agents that offer only basic features of CTI.

PORT HANDLING

CTI uses the ASB 150 02 Multichannel Protocol for V.24 interfaces, used already in applications like RASC

or MIS for ACD applications. This allows the physical link V.24 to be used by different applications (up to 15).

Port address

This is used to store the V.24 port address. The default value of this port is 0FFFFh and means: no CTI port is available (see also command 8901).

Port activation from CTI

The attempt to activate the port happens:

- After restart of ASB 150 02 (warm start)
- After reprogramming of the port address
- After a request from the Server PC

Port activation from the Server PC

The Server PC tries to activate the port:

- After restart of the Server PC
- After maintenance work (e.g. update of the driver software)

Port answering positions

The answering position can be:

- RASC (Operation and Maintenance)
- ACD (MS)
- CTI

Periodic status check

In order to maintain the CTI link, ASB 150 02 sends every minute to the Server PC a periodical status-check signal.

Activation request from the Server PC

This signal is activated in cases when (e.g. hardware key has been changed) the Server PC requests from the ASB 150 02 to activate the logical link.

Port deactivation from CTI

The deactivation of the port happens:

- After clearing the port address
- After a request from the Server PC

Deactivation request from the Server PC

Activated when (e.g. upgrading the driver software) it is necessary that the Server PC requests from the ASB 150 02 to deactivate the logical link.

MONITORS

It is possible to monitor all types of telephones in ASB 150 02. The process of monitoring an extension is associated with a lot of reports and requests exchanged between ASB 150 02 and the connected PC.

The monitoring of the trunk lines in ASB 150 02 is also possible, but this is done automatically, so there is no request exchange between ASB 150 02 and connected PC. Only certain activity events on the trunk lines are sent from the ASB 150 02 to the connected PC.

The following monitor events are supported:

Monitor verification

Checks if a directory number of ASB 150 02 can be used for monitoring.

Monitor start

Starts the monitoring on an ASB 150 02 extension. The extension can be also an ACD-agent.

Monitor stop

The Server PC can stop the monitoring on an extension in ASB 150 02.

Monitor end

The ASB 150 02 reports that monitoring on a monitor has ended.

REPORTS

The Reports are in fact real time reports of activity that is on-going at a certain device (physical or logical one).

Several reports will be generated for extensions activity, trunks activity and ACD activity. Reports on extension activity:

- Status and number update events for monitored CTI agents
- Status update events for not monitored extensions
- Directory number update events for monitored CTI agents
- Name update events for monitored CTI agents
- Forward address update events for monitored CTI agents
- Activated features (on request by Server PC)

Reports on trunk activity:

- Device (activity) status update events for all trunk lines

Reports on ACD activity:

- ACD-queue update events

- ACD-agent update events REQUESTS

A lot of requests circulate between ASB 150 02 and the connected PC for initiating different functions or services on extensions. The following table shows all requests sent by a PC and supported in ASB 150 02.

Request	Description	Notes
Make call	Initiate a new call on an extension	
Clear call	Clear the active call on an extension	
Answer call	Answer an incoming call on an extension	
Hold	Request to set an ongoing call to hold	
Transfer	Request a transfer on an extension	
Conference	Initiate a conference from an extension	
Call Back	Request to initiate an automatic call back	
Camp on	Initiate a camp on from an extension	
Intrusion	Request to initiate an intrusion	
Individual call pickup	Individual call pickup from an extension	
Group call pickup	Group call pickup from an extension	
Follow Me	Initiate Follow Me on an extension	
Call forward	Request to initiate call forwarding	
Do not disturb	Set do not disturb on an extension	
Info	Setup an info for an extension	No voice infos
Message	Send a message to an extension	No voice messages
Function	Initiate on an extension: - simple function without LED - toggle functions - functions which require a key on the instrument.	
Keypress	Press a fixed key on an extension	
PC controlled routing	Request PC controlled routing of incoming calls on an extension	Only possible on monitored CTI-agents
New destination	Request rerouting to a new destination within ASB 150 02	
Deflect call	Deflect the call (in ring or queue status) to another destination	
ACD group setting	Request an ACD-agent to login/logout from ACD group(s)	
ACD ready	Request an ACD-agent to set ACD ready/not ready	
ACD Call Code	Request an ACD-agent to setup a Call Code for a call	

Request	Description	Notes
Snapshot device	Request a snapshot device	A device can be: 1.logical - e.g ACD group, or 2.physical - e.g. extension, trunk etc.
Features	Request a report from an extension for the features that are actually activated on that extension.	
Device service	Request the device type of the directory number	

Capacity

It is possible to monitor up to 40 (80 with R10 system software) CTI agents.

Limitations

The hotel guest instruments can not work as monitored CTI agents.

ISDN-terminals can not be used as monitored CTI agent.

ACD-supervisor functions are not supported.

In ECMA 179 the term “Caller ID” has been used for the unique identification of a call. This caller ID is not supported by the ASB 150 02, but instead, it has to be generated by the software running on the connected PC.

CTI may not be installed on one system , 1st party CTI (TAPI) is already running, or vice versa. With system software for R10 this limitation isn’t valid.

Programming

8901
CTI port

Via this command it is possible to specify which V.24 port is active for CTI.

```
10 Jul 14:40   +15˚
CTI PORT           8901              bbii
backward     forward     c/i       return
```

bb — Enter the boards number where the CTI port is located 0-63.

ii — Enter the individual number of the CTI port on the board. The value must be between 00-02.

The default value is blank and means that no CTI port has been defined.

6006
Device type

The command defines to which type of locally connected unit the I/O-port (V.24) is to be adapted. When programming the unit the values of several parameters, adapted for the connected unit, will be set automatically.

```
10 Jul 14:40   +15˚
DEVICE TYPE LOCAL     6006     aabb      cc
backward     forward     c/i       return
```

aabb — Line position

aa = board position

bb = Individual number on board, shall be 00-02 (depending on the CPU-D_ or AUX_ board used).

cc Type of unit; the value must be 00-12, default value is 3 (printer type).

In case of the CTI, the cc-parameter must be set to:

11= Operation and Maintenance centre (O & M centre) with RASC, MS or CTI.

6007
Characterset

The command defines which set of characters shall apply for the locally connected unit for the stated I/O-port. The list of character sets is:

0 = PABX internal set

1 = USA ASCII (initial data)

2 = Swedish ASCII

3 = Character set 2 in printer ERICSSON 7111

4-9 = Undefined values

```
10 Jul 14:40   +15°
CHARACTERSET LOCAL     6007    aabb     c
backward     forward     c/i       return
```

aabb Line position

aa = board position

bb = individual number on board, shall be 00-02 (depending on the CPU-D_ or AUX_ board used).

c Set of characters; the value = 0-9

For the current case (CTI usage) the command must be set to “1” meaning that US-ASCII character set has been used.

6009
Baudrate

The command defines the bit speed for the V.24 port used for CTI.

Using this command it is possible to select bit rates between 50 - 9600 baud.

Codes are:

0= The stated board will not permit local V.24 connection.

1= 50	9=1800
2= 75	10=2400
3=110	11=3600
4=135	12=4800
5=150	13=7200
6=300	14=9600
7=600	15=14400
8=1200	16=19200

```
10 Jul 14:40   +15°
BAUDRATE LOCAL       6009     aabb      c
backward     forward     c/i       return
```

aabb Line position

aa = board position

bb = individual number on board, shall be 00-02 (depending on the CPU-D_ or AUX_ board used).

c Baud rate; the value = 00-16, default value is 14 (9600 baud).

In this case (for CTI) the command must be set to 14 (9600 baud for R8, R9) or 16 (19200 baud for R10).

6010
Master / Slave

The command defines whether the PBX is master or slave when connected to an external equipment on the V.24 interface.

```
10 Jul 14:40   +15°
MASTER/SLAVE              6010       Y
backward     forward                 return
```

y 0: PBX is master
1: PBX is slave

For the current case (CTI usage) the command must be set to “1” meaning that PABX is used as slave.

6011
Autoselect allowed?

This command allows to specify whether or not automatic selection will be allowed when making local connections of external equipment.

If the answer is no, the port will only be used by services which have commands of their own for selecting ports.

If the answer is yes, the port may also be selected by services which have no command for the specification of port.

```
10 Jul 14:40   +15°
AUTOSELECT LOCAL      6011     aabb     c
backward     forward     c/i       return
```

aabb Line position

aa = board position

bb = individual number on board, shall be 00-02 (depending on the CPU-D_ or AUX_ board used).

c Decides whether or not automatic selection of this port is allowed.

Yes = allowed

No = not allowed (default value)

In the CTI case the command must be set to NO.

6012
Route on request

This command routes a connection request from the externally connected equipment to the desired service in the PBX.

```
10 Jul 14:40   +15°
REROUTE ON REQUEST     6012     aabb     c
backward     forward     c/i       return
```

aabb Line position

aa = board position

bb = Individual number on board, shall be 00-02 (depending on the CPU-D_ or AUX_ board used).

c Enter the desired application used as answering position for connection requests. The default value is blank.

0 = not used for external connections

1 = Operation and Maintenance with RASC

2 = ACD (MS)

3 = CTI

Equipment

ASB 150 02 system software R8 or higher and one free V.24 port on the CPU-D_ or AUX_ board are required.

Security Unit

Starting with R10, a security unit (also known as FECU) is required for every site (with R10 software) running BusinessLink for Novell. For detailed information about FECU, please refer to document FACILITY DESCRIPTION (155 34-ASB 150 02 Uen), especially chapter 6, FUNCTIONALITY OF ASB 150 02 WITH/WITHOUT FECU.

System Telephone

All telephones of the Dialog 3000 series may be used in combination with CTI.

- DBC 210
- DBC 211
- DBC 212
- DBC 213
- Portable Telephones

Connection to the ASB 150 02 system

Following hardware is required for connection of the ASB 1500 02 to the Server PC.

- Cable for connection of the ASB 1500 02 to the Server PC

For detailed information about the installation of CTI to the ASB 150 02 system, see document START OF OPERATION (1537-ASB 15002 Uen).

System Requirements

For successful installation and operation of the CTI-Link the following minimum system requirements have to be met:

Server:

- 386 DX 33 MHz processor
- 16 MB RAM (for NetWare OS 3.x) or
  20 MB RAM (for NetWare OS 4.x)
- Novell NetWare OS version 3.11, 3.12, 4.1 or higher
- NetWare Telephony Services version 2 or higher
- one working and free RS232 port, with a UART 16550 chip
- 1 MB free hard disk space

A separate Telephony Server is recommended.

Client PCs:

(Hardware according to Microsoft specifiation for operating system)

- Microsoft Windows 3.1 or later

Documentation

The Programmer's Guide provides the TSAPI programmer with specific information about the CSTA interface of the ASB 150 02.

The Manager's Guide provides information about how to install CTI on a Novell NetWare Telephony Services Server.

Programmer's Guide	EN/LZT BS 102 080
Manager's Guide	EN/LZT BS 102 081

CTI Developer's Kit

The CTI developer's package is thought as a package that provides software developers and software houses with the necessary information to develop and adopt their application towards the BusinessPhone proprietary and standardized CTI interface.

The package consists of a confidentiality agreement, the IWD (Interwork Description) of the BusinessPhone's CTI and V.24 interface, the BusinessLink for Windows NT Programmer's and Manager's Guide as well as the BusinessLink for Novell Programmer's and Manager's Guide.

CD-ROM CTI Developer's Kit FAS BS 102 202/DEV

The CTI Developer's Package comes on a CD-ROM, a confidentiality agreement has to be signed and sent back to the logistics department at SEA, before the package will be sent out.

BusinessLink for Windows NT Version1.1

Definition

The BusinessLink for Windows NT (BL NT) provides an external computing device with control functionality to request telephony services from the PBX and response reports events on every activity within the CTI environment. BL NT is based on proprietary signalling via a serial V.24 interface between the PBX and the CTI Server. The clients (e.g. ACD-agents, Operators) are connected to the CTI Server by means of a Local Area Network (LAN) which is based on a Windows NT. The software on the client side is a DLL (Dynamic Link Library) which translates the messages from the Teleophony Server towards the client application. The (digital) CSTA telephone devices of the clients are connected directly to the PBX. The propiretary information from the PBX is converted to TSAPI standard with a Windows NT intermediate Service in the CTI Server.

Use

With the BL NT it is possible to run TSAPI applications in a Windows NT network. The big advantage compared to BusinessLink for Novell is that there is no need for additional software to provide CTI functionality towards client PCs.

Two different client software modules are part of the BL NT product:

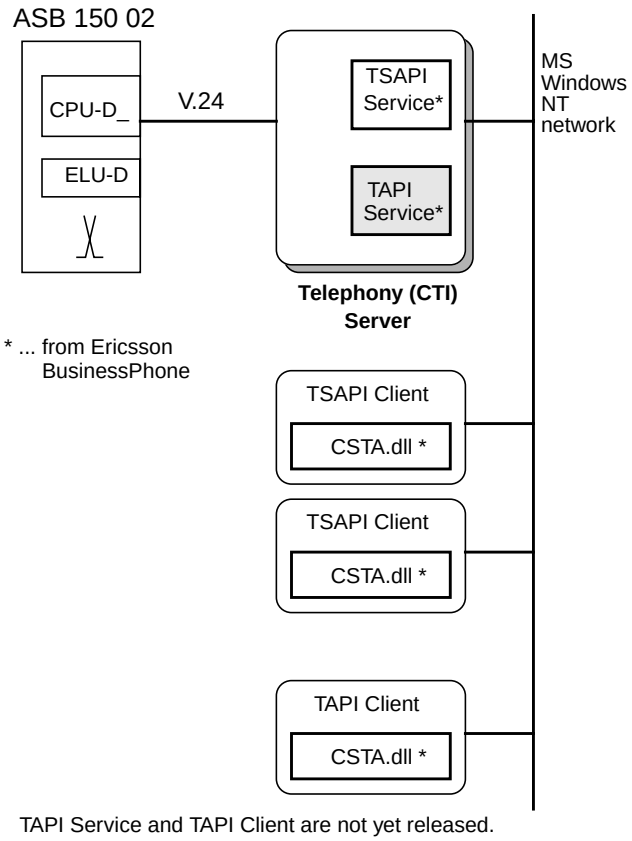
- **32-bit CSTA.dll**

The 32 bit CSTA.dll is the standard interface for applications to the Windows NT environment. It is used by the BusinessPhone Call Centre Assistant (CCA) and the BusinessPhone Operator Suite (OWS) and all other 32 bit applications to communicate with the CTI Server and the PBX.

- **16-bit CSTA.dll**

The 16 bit CSTA.dll is required to run 16 bit CTI applications on Windows 95 or Windows NT client PCs.

Note: The 16 bit CSTA.dll is not yet released.



TAPI Service and TAPI Client are not yet released.

Operation

Due to the fact that BL NT use the same CTI interface than BL Novell, the main functionality of the BL NT remains the same. Therefore, in this document only new features compared to BL Novell are explained.

- **Monitoring of ACD groups**

New calls to an ACD group are presented directly to a free ACD agent or are queued before they are handled by one of the ACD agents belonging to this group. In order to provide the CTI Server with event and status information about the calls which are handled by the ACD group, it will be possible to start a CTI monitor on an ACD group. After the successful start of a CTI monitor on the directory number of an ACD group the following information is forwarded to the CTI Server:

- Calls alerting at the ACD group, containing the connected party number.

- Calls pending in the queue and waiting for a free ACD agent.
- Disconnection of a call.
- Change of the directory number of the monitored ACD group.

These additional events which are associated with the directory number of an ACD group will give the CTI Server the possibility to get a more detailed picture of the handling of an ACD call inside PBX.

- **Rerouting of specific calls on demand**

The existing functionality of the Automated Attendant will be extended to offer a flexible way of routing calls via CTI. This is done by the adaptation of the general routing procedure of the Automated Attendant and by the enhancement of the facility CTI Groups. The current version of the facility CTI Groups prompts the caller with a voice announcement to enter a PIN-code and then sends a request to reroute the call containing the CLIP and PIN of the caller as parameters to the CTI Server. A data base research on the basis of the CLIP and PIN results in the most suitable destination for the call, and the BusinessPhone will get this new destination from the CTI Server.

Especially in connection with an ACD environment it is not useful to ask the caller for a PIN-code, as he probably will not have any. Nevertheless it can be reasonable to use the facility CTI for AA as a CTI-filter in front of the actual ACD. In this case the data base request will be performed only on the basis of the CLIP of the caller, and therefore the question for the PIN could be suppressed. This will be done by simply not programming the according voice announcement reference in the relevant RASC command. If this reference is not programmed, the BusinessPhone sends immediately the reroute request to the CTI Server without waiting for the caller to enter his PIN. This special PIN can be useful as an additional parameter in a database request to find a suitable reroute destination.

The feature could be used for instance to route VIP customers directly to the most appropriate agent or to route troublesome and annoying callers directly to the Voice Mail System.

- **Tandem configuration with CTI**

With the integration of cordless phones in the BusinessPhone the concept of a tandem configuration was introduced in the central software. A tandem configuration is a master-slave combination of the two extensions, where only the directory number of the master is visible to the user. Internally however the slave has his own hidden directory number. With BusinessLink for Windows NT all CTI applications will have access to this feature and the driver will take care of the internal message handling. The only restrictions are:

- A slave extension can never be an ACD-agent
- All ACD requests towards a slave extension will be suppressed by the driver.

- **Monitoring of operator instrument (as Interface to the new PC-Operator)**

The CTI based operator offers the possibility to substitute the existing operator instrument. Therefore, an application program will offer the full range of operator functionality even if there is only a standard digital telephone, which is programmed as operator instrument. This allows free seating of the operator, as a standard extension can be used as operator instrument by starting the OWS application on the associated PC. (Exceptions: R-key instruments [POTS, Freeset] and analogue telephones cannot be used as operator instrument.)

- **Support of Networking**

The networking feature provides the possibility to operate the BusinessPhone as part of a private corporate network. In order to reach destinations in the network, the number plan within the network has to be extended by the private network access code; a private network number can consist of 8 digits at maximum. Therefore, the networking functionality of the CTI system will be enhanced, in order to offer better support for call handling in private and public networks.

Only internal directory numbers of the connected BusinessPhone will be controlled via the CTI link. Therefore, networking functionality effects on the CTI implementation only as far as the source of an incoming call or the destination for an outgoing call is concerned. Incoming calls from a corporate network will be presented to the CTI Server as standard incoming trunk call, and outgoing network calls will be handled as outgoing calls toward a public network.

For a detailed description of all call states and events please refer to the product documentation (BusinessPhone BusinessLink for Windows NT - Programmer's Guide).

The following different types of CTI applications are supported:

- Screen Based Telephony
  Using the terminal to make and monitor calls
- Call Based Data Selection
  Using telephone call information to "pop" the correct data onto a screen
- Co-ordinated Call Monitoring
  Providing information containing call data and what the agent was doing at the time
- Interactive Voice Response
  Connecting the caller directly to the computer
- Message Exchange
  Interchanging message information between telephone system and computer
- Voice and Data Call Association
  Simultaneous transfer of telephone and data call
- Application Controlled Routing for Incoming Calls
  Using the computer to route calls to the correct group of agents
- Application Controlled Routing for Outgoing Calls
  Using the computer to initiate and/or route outgoing calls

Capacity

BL NT supports up to 40 monitored agents in the call centre and up to 80 agents in the office environment.

It has to be differentiated between monitored agents and "light monitored agents". Monitored agents report all call and device states to the computing device and should be able to generate reports on demand. Light monitored agents report only a limited number of call states.

Limitations

16 bit applications on Windows 3.x are not supported.

Programming

6006
Device type

The command defines to which type of locally connected unit the I/O-port (V.24) is to be adapted. When programming the unit, the values of several parameters adapted to the connected unit will be set automatically.

```
10 Jul 14:40   +15°
DEVICE TYPE LOCAL     6006    aabb     cc
backward     forward     c/i       return
```

aabb	Line position aa = board position bb = Individual number on board, shall be 00-02 (depending on the CPU-D_ board used).
cc	Type of unit; the value must be 00-12, default value is 3 (printer type).

In case of the CTI, the cc-parameter must be set to:

11= Operation and Maintenance centre (O & M centre) with RASC, MS or CTI.

6007
Characterset

The command defines which set of characters shall apply to the locally connected unit for the stated I/O-port. The list of character sets is:

0 = PABX internal set

1 = USA ASCII (initial data)

2 = Swedish ASCII

3 = Character set 2 in printer ERICSSON 7111

4-9 = Undefined values

```
10 Jul 14:40   +15°
CHARACTERSET LOCAL     6007    aabb     c
backward     forward     c/i       return
```

aabb Line position

aa = board position

bb = individual number on board, shall be 00-02 (depending on the CPU-D_ or AUX_ board used).

c Set of characters; value = 0-9

For the current case (CTI usage) the command must be set to “1”, meaning that the US-ASCII character set has been used.

6009
Baudrate

The command defines the bit speed for the V.24 port used for CTI.

Using this command it is possible to select bit rates between 50 - 19200 baud.

Codes are:

0= The stated board will not permit local V.24 connection.

1= 50	9=1800
2= 75	10=2400
3=110	11=3600
4=135	12=4800
5=150	13=7200
6=300	14=9600
7=600	15=14400
8=1200	16=19200

```
10 Jul 14:40   +15°
BAUDRATE LOCAL       6009     aabb      c
backward     forward     c/i       return
```

aabb Line position

aa = board position

bb = individual number on board, shall be 00-02 (depending on the CPU-D_ board used).

c Baud rate; value = 00-16, default value is 14 (9600 baud).

In this case (for CTI) the command must be set to 16 (**19200** baud).

6010
Master / Slave

The command defines whether the PBX is master or slave when connected to an external equipment on the V.24 interface.

```
10 Jul 14:40   +15°
MASTER/SLAVE              6010       Y
backward     forward                 return
```

y 0: PBX is master
1: PBX is slave

For the current case (CTI usage) the command must be set to “1”, meaning that the PABX is used as slave.

6011
Automatic selection of this port is allowed in local connections

This command allows to specify whether or not automatic selection will be allowed when locally connecting external equipment.

If the answer is no, the port will only be used by services which have commands of their own for selecting ports.

If the answer is yes, the port may also be selected by services which have no command for the specification of the port.

```
10 Jul 14:40   +15°
AUTOSELECT LOCAL      6011     aabb     c
backward     forward     c/i       return
```

aabb — Line position

aa = board position

bb = individual number on board, shall be 00-02 (depending on the CPU-D_ or AUX_ board used).

c — Decides whether or not automatic selection of this port is allowed.

Yes = allowed

No = not allowed (default value)

In the CTI case the command must be set to NO.

6012
Route on request

This command routes a connection request from the externally connected equipment to the desired service in the PBX.

```
10 Jul 14:40   +15°
REROUTE ON REQUEST     6012     aabb     c
backward     forward     c/i       return
```

aabb — Line position

aa = board position

bb = Individual number on board, shall be 00-02 (depending on the CPU-D_ or AUX_ board used).

c — Enter the desired application used as answering position for connection requests. The default value is blank.

0 = not used for external connections

1 = Operation and Maintenance with RASC

2 = ACD (MS)

3 = CTI

In this case the command must be set to 3 (CTI).

Equipment

ASB 150 02 system software R10 or higher and one free V.24 port on the CPU-D_ or AUX_ board are required.

Security Unit

A security unit (also known as FECU) is required for every site running BusinessLink for Windows NT. For detailed information about FECU, please refer to document FACILITY DESCRIPTION (155 34-ASB 150 02 Uen), especially chapter 6, FUNCTIONALITY OF ASB 150 02 WITH/WITHOUT FECU.

System Telephone

All telephones of the Dialog 3000 series may be used in combination with CTI.

- DBC 210
- DBC 211
- DBC 212
- DBC 213
- Portable Telephone Set

Connection to the ASB 150 02 system

The Following hardware is required for connection of the ASB 1500 02 to the Server PC.

- Cable for connection of the ASB 1500 02 to the Server PC

For detailed information about the installation of CTI to the ASB 150 02 system, see document START OF OPERATION (1537-ASB 15002 Uen).

System Requirements

For successful installation and operation of the CTI-Link the following minimum system requirements have to be met:

Server PC:

- Pentium 133 MHz processor
- 32 MB RAM and a minimum of 245 MB hard disk space.
- one working and free RS232 port, with a UART 16550 chip or better
- Ethernet LAN card
- installed Microsoft Windows NT Workstation or Server, version 4.0, service pack 3 or better

Note: For high traffic call centre environments, a faster computer such as a Pentium 166 MHz PC with 64 MB RAM is required.

A separate CTI Server is recommended.

Documentation

The Programmer's Guide provides the TSAPI programmer with specific information about the CSTA interface of the ASB 150 02.

The Manager's Guide provides information about how to install CTI on a Windows NT Server/Workstation and how to install the software on the client PCs.

The documentation will be delivered on the product CD-ROM in Adobe PDF (printable document format) in two versions (designed for screen viewing and designed for printing)

CTI Developer's Kit

The CTI developer's package is thought as a package that provides software developers and software houses with the necessary information to develop and adopt their application towards the BusinessPhone proprietary and standardized CTI interface.

The package consists of a confidentiality agreement, the IWD (Interwork Description) of the BusinessPhone's CTI and V.24 interface, the BusinessLink for Windows NT Programmer's and Manager's Guide as well as the BusinessLink for Novell Programmer's and Manager's Guide.

CD-ROM CTI Developer's Kit FAS BS 102 202/DEV

The CTI Developer's Package comes on a CD-ROM, a confidentiality agreement has to be signed and sent back to the logistics department at SEA, before the package will be sent out.

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
SEA/EBBMP C. Bertsch	SEA/EBBX/E	153/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved / Kontr/Checked		Datum/Date / Rev	Tillhör/Referens-File/Reference
SEA/EBBMP		99-07-15 B	ASB 150 02
		Database reference	
		153.fm	

CTI GROUPS

COMPUTER TELEPHONY INTEGRATION FOR AUTOMATED ATTENDANT

Definition

Since ASB 150 02 R11 the feature "CTI for AA" has been renamed to CTI Groups and expanded in the number of available CTI Groups from 8 to 16.

Within CTI Groups the caller will be instructed by an AA to identify himself at the entry of the telephony system using an identification code. An identification code can be one of the following:

- PIN / ID-code
- ANI (A-Number Identification)
- DNI (Dialled Number Identification)

External applications, based on PIN/ID-code, DNI or ANI, determine where the call is rerouted to, respectively to find the most suitable directory number to answer the call.

Use

CTI Groups are another flexible and intelligent way of handling the internal and external calls. The CTI Groups act as a holding tank for incoming calls.

During the time that telephony server searches for the most suitable destination to transfer the call, the call itself is parked and connected to a silence-channel or to Music On Hold (depending on how it has been programmed). The called party on the other side can be provided, from the external applications, with additional information on the caller (based on his PIN/ ID-code, ANI, DNI), information which can be displayed on the called extension's PC-screen.

It is also possible to deflect calls to an IVR system while maintaining its queue position, or playing - based on CLI or customer PIN/ID-code prerecorded messages to each call in the queue.

Operation

The incoming call will be connected first to the Automated Attendant. After a short period of time a greeting announcement will be played to the caller. This is followed by the instruction announcement that explains to the caller how to proceed when entering the ID-code. The short time period before playing the greeting announcement is needed to give the experienced caller the possibility to enter the ID-code without hearing the voice prompts.

Receiving a call to the facility

The CTI Group analyses the received key codes entered by the caller. The ID-code must be a string with a maximum of 16 digits, followed at the end by a #. The exchange checks only the length of the ID-code. The validity of the ID-code is checked by the application running on the external computer. If more than 16 digits have been entered, an error announcement will be played to the caller and he/she can try once more to enter the ID-code.

If the caller fails again, he/she will be immediately connected to a preprogrammed exit position.

AA-option of the CTI Groups feature supervises also the response time of the caller. If the caller overflows the register time-out interval for the first time during the dialling process he/she will receive the complete voice prompts again and has the possibility to try once again from the beginning.

After the second time-out the caller will be routed to a preprogrammed exit position (e.g. operator).

Waiting for a reroute position from external applications

Receiving a correct ID-code, the facility parks the call and connects it to a silence channel or to “Music on hold” (depends on how it has been programmed). When the caller is parked, the VMU-channel (used by AA) and the register used for receiving DTMF signals are released. At the same time the ID-code of the caller and (in case of ISDN) the calling line identification are sent to the external applications.

External applications start searching in a database to find the most suitable directory number for transferring

the call. When such a number is found, the exchange transfers the call to this destination.

When the caller presses only # without leading digits, the CTI Groups feature recognises this entry as a correct ID-code. The external computer starts a normal procedure for finding the best reroute destination that corresponds to this ID-code. After finding it, the caller will be connected to the reroute position.

By pressing only * the caller will be connected immediately to the exit position.

NOTE: 1. If the CTI-link is not active, the call will be connected to the preprogrammed exit position for the corresponding CTI Group.

2. The technician that has to configure the external application must be aware of the fact that the answering destination (selected by external application) must not be an Automated Attendant directory number.

AA-structure in “CTI Groups” facility

The AA used within “CTI Groups” is an one level AA. This AA consists on 3 voice announcements:

- greeting announcement
- instruction announcement
- error announcement

The Selection List of this AA is:

AA of “CTI Groups” feature - Selections List

COMMAND	COMMENTS	ENTRIES
8730	Greeting anno. reference	
8731	Instructions anno. reference	
8732	Error anno. reference	
8733	Exit position dir.no	

Up to 24 voice references are available for this feature. It is possible to create up to 8 one-level AAs using different voice references for each or up to 16 one-level AAs sharing some voice references (e.g. Error anouncment, ...). Each AA is supported with a greeting, an instructing and an error announcement; each with its own directory number.

NOTE: Only one AA (with one-level) at a time can be used within a CTI Grous . See commands 8730 - 8733.

Capacity

In the feature “CTI Groups” up to 24 voice announcements can be used. These voice announcements can be grouped in 8 AAs, or - if some voice announcements can be shared - 16 different AAs are possible.

Limitations

See under LIMITATIONS in the “Automated Attendant” Facility Description.

Programming

The programming procedure starts with creating the AA for “CTI Groups”. This option is accessible only via RASC.

5428
Create facility CTI Groups

Via this command it is possible to specify the directory number of AA (imply: voice menus) you are going to need in your specific application. It is possible to create up to 16 different AA for this facility.

5528
Delete facility CTI Groups

Via this command you can delete an AA.

5628
Alter facility CTI Groups

This command allows you to change/edit the directory numbers of AA-s.

It is also possible to change/edit the information in the “name”- field. The information here can consist up to 35 characters.

8730
Greeting announcement reference

In this command you must specify the reference number of the greeting announcement in the CTI Groups facility.

Enter the directory number of the desired AA first (there are max. 16 one-level AAs; only one of them must be selected). Then enter the reference number of the Automated Attendant’s greeting announcement.

Press "Enter" to go to the next command of the current selections list.

8731
Instructions announcement reference

In this command you must specify the reference number of the “Instruction announcement” for CTI Groups facility.

Enter the directory number of the desired AA first. Then enter the reference number of the Automated Attendant’s instruction announcement.

Press Enter to go to the next command of the current selections list.

8732
Error-announcement reference

In this command you must specify the reference number of the “Error announcement” for CTI Groups facility.

First enter the directory number of the desired AA. Then enter the reference number of the Automated Attendant’s error announcement.

Press Enter to go to next command of the current selections list.

8733
Automated Attendant error reroute position

In this command you must specify the default exit position in case of errors (time-out or wrong entries) for CTI Groups facility.

First select the directory number of the desired AA. Then enter the extension’s directory number of the exit position.

If no exit position has been specified, the external incoming calls will be rerouted to the reroute position of the corresponding trunk.

8734
Use AA in combination with ACD group

This command will be used when the facility "CTI Groups" shall be used as a call filter in front of an ACD group.

The command states whether the facility "CTI Groups" is used in combination with an ACD group or not. The parameter is the directory number of an ACD group. If there shall be no association with an ACD group, the field is left blank.

If a valid directory number of an ACD group is entered, the Automated Attendant will send MS-reports to a connected MS-application upon rerouting an ACD call by CTI.

4603
Record announcements allowed?

It is possible to determine whether or not a certain VMU board may be used for voice announcements.

```
10 Jul 14:40   +15°
REC ANNO ALLOWED ?    4603 xxyy        zzz
backward    forward      c/i       return
```

xxyy	Enter board position (01 - 63) and 00
z	Enter relevant function: YES = Voice announcement can be stored on board NO = Voice announcement cannot be stored on board (default value).

4426
Recording of CTI Group voice prompts

(accessible only via telephone set)

Via this command you can record / play / erase voice menus/announcements for the CTI Groups facility.

```
10 Jul 14:40   +15°
CTI Group PROMPTS    1-24            4426>
                                     return
```

The capacity of 24 voice announcements in this command remains for 8 one-level possible AA (each with 3 voice announcements) needed by the user. If voice announcments can be shared within the CTI Groups 16 one-level AA are possible.

Press Enter

```
10 Jul 14:40   +15°
CTI Group PROMPT NO:                  xx
                                     return
```

xx	enter the reference number of an AA voice menu/announcement you want to record / play / erase (value 1-24).
return	turns one step backward.

```
10 Jul 14:40   +15°
CTI Group PROMPT NO:                  xx
record      play       erase       return
```

Now you can start to record / play / erase the above selected voice announcement.

Equipment

FECU

The CTI Groups feature is protected by the FECU. Without FECU only 8 CTI Groups instead of 16 are available and a FECU warning is generated when a CTI monitor has been started on one of the CTI Groups from 9 to 16.

For detailed description see Facility Description - General, document 155 34-ASB 150 02 Uen.

The use of the VMU-HD is mandatory for the CTI Groups facility.

See under Equipment in the “Automated Attendant” and “Computer Telephony Integration” Facility Description.

CONFERENCE

Definition

Conference means that three or more internal or external parties can participate in a call.

Use

Conference is used when several parties wish to converse without leaving their rooms-/workstations.

As several external parties can participate also this means that telephone meetings can be held via the national or international network.

Operation

The person who initiates a conference call is designated conference leader.

Initiation of conference

- Conference leader makes call to first participant in conference and waits for answer
- Participant is informed that he/she will be participating in conference and conference leader asks participant to wait
- Conference leader initiates inquiry call to participant 2 and waits for answer.
  On answer the latter is informed that he/she will be participating in a conference

Interconnection of conference participants is achieved as follows:

Analogue telephones

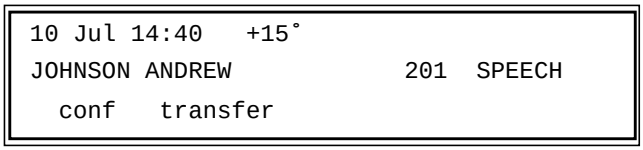
- Press **R**-key
- Await dial tone
- Press digit **3**
- Parties are interconnected. Short tone burst is sent to all parties, who thereafter receive repeated conference tone (tones are market dependent)

BASIC telephones

- Press permanent function key **Message/Conf**
- Parties are interconnected. Short tone burst is sent to all parties, who thereafter receive repeated conference tone (tones are market dependent)

ECONOMY -, STANDARD - and EXECUTIVE telephones

- Press permanent function key **Conf**
  or **2nd** and **Conference**
  or menu key **conf**



- Called party is connected to conference and all parties hear short tone burst. Thereafter parties receive conference tone.

Throughout conference, the display shows:

EXECUTIVE telephone

```
10 Jul 14:40   +15°
       CONFERENCE                SPEECH
```

STANDARD telephone

```
10 Jul 14:40   +15°
   CONFERENCE      S
```

The menu text **conf** signifies only that the system permits a conference. However the function can be prevented on account of the extensions' categories.

Connection of more participants

The conference leader can connect more parties by initiating a new inquiry.

Disconnection of a CONFERENCE

Three party conference:

- When one of the participants leaves the conference this becomes a normal two-party call.

Multiparty conference:

- If the conference leader leaves the conference all participants will be disconnected.
  If any other participant leaves the conference he/she will go free but the other participants continue the conference

Capacity

Up to six participants, internal and external, can participate in a conference.

The number of external participants is selectable via programming.

Up to 60 parties in the system can be interconnected in various conferences.

Limitations

Only the conference leader can initiate inquiry in order to access more participants.

Other participants can only leave the conference by disconnecting.

Normally no check is made in the traffic group matrix in conjunction with the establishment of a conference. If this kind of restriction is required contact your supplier.

Intrusion on a conference participant is not permissible.

Conferences cannot be initiated from hotel guestroom telephones.

Programming

Following commands are only accessable via RASC:

Conference participants

4901
Number of participants

If the maximum number of conference participants is to be limited (initial data = 6), this must be programmed.

4902
Number of external lines

The maximum number of trunk lines must be programmed.

Initial data = 1.

4903
Number of PE-lines

The maximum number of lines to a public exchange must be stated.

Initial data = 1

Authorization to initiate a conference

0101
Facility COS

The possibility to initiate a conference is determined by the extension's facility category. Initially, all categories are allowed to initiate a conference.

Following command is accessable via the telephone and RASC:

3005
Conference?

Extension that shall not be allowed to initiate a conference must be given a facility COS where this feature is set to "NO".

To program facility COS list.

```
10 Jul 14:40   +15°
CONFERENCE            3005   xx        z
 backward  forward     c/i      return
```

xx — Enter the number of the facility COS (00 - 15)

z — Enter the relevant function
Y = Conference allowed (default)
N = Conference not allowed

Equipment

None.

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
SEA/TB/MP T.Preißner	SEA/TB/X	155/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved / Kontr/Checked		Datum/Date / Rev	Tillhör/Referens-File/Reference
SEA/TB/MP		98-01-26 / A	ASB 150 02
		Database reference	
		155.fm	

CONNECTION STATE MESSAGE

Definition

A connection state message is the acoustic and/or optical signal supplied by the system when a directory number has been dialled.

Use

The connection state message informs the user of the caller's state and (if any) the possibilities for ordering facilities.

Operation

Called party is free

Tone message

Ring control tone or, for an internal call to **Line 2**, special ring control tone.

Display message

The display shows for instance if the call is presented on **Line 2** of the called party:

EXECUTIVE telephone

```
10 Jul 14:40   +15˚
JOHNSON ANDREW            203  FREE L2
```

STANDARD telephone

```
10 Jul 14:40   +15˚
JOHNSON A    203  F2
```

The extension can:

- Wait for called party to answer
- Send a message to called party
- Order paging
- Terminate call

Called extension is busy

Tone message

Busy tone.

Display message

EXECUTIVE telephone

```
10 Jul 14:40   +15˚
JOHNSON ANDREW            203  BUSY
call-back  camp-on             intrusion
```

STANDARD telephone

```
10 Jul 14:40   +15˚
JOHNSON A    203  B
```

The extension can:

- Order callback
- Order intrusion
- Order camp-on
- Send message to called party
- Terminate call

Called number is vacant (unassigned)

Tone message

Vacant tone

Display message

The display shows "UNKNOWN" or "NU" (Number unobtainable), that is the number is vacant.

EXECUTIVE telephone

```
10 Jul 14:40   +15˚
                        200  UNKNOWN
```

STANDARD telephone

```
10 Jul 14:40   +15˚
              200  NU
```

The extension can:

- Terminate call

Called number is blocked

Tone message

Congestion tone.

Display message

The display shows "BLOCKED" or "NB" (Number blocked), that is the number is currently inaccessible or restricted.

EXECUTIVE telephone

```
10 Jul  14:40  +15˚
                        123  BLOCKED
```

STANDARD telephone

```
10 Jul 14:40   +15˚
              200  NB
```

The extension can:

- Terminate call

Programming

None.

Equipment

None.

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
SEA/EBBMP M.Plattner	SEA/EBBX/E	156/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved / Kontr/Checked		Datum/Date / Rev	Tillhör/Referens-File/Reference
SEA/EBBMP		99-07-15 A	ASB 150 02
		Database reference	
		156.fm	

Configuration Manager

BusinessPhone Configuration Manager
Simple, fast system configuration

Definition / Use

The BusinessPhone Configuration Manager allows end-users to configure their BusinessPhone system from within the familiar Windows environment. It simplifies and speeds up all the configuration facilities that were previously only available from system telephones, and more. BusinessPhone Configuration Manager is especially useful for dynamic organizations, such as call centres, who need to make frequent and fast changes to extension-user data and other system parameters.

Operation

BusinessPhone Configuration Manager makes BusinessPhone system configuration quick and simple enough for any Windows user to handle. Functions such as establishing PBX and call pick-up groups, defining class of service, entering common abbreviated numbers and assigning function keys can all be carried out from easy-to-follow screen-based windows and menus, in a choice of languages.

Apart from making configuration functions previously only accessible from system telephones available in a user-friendly Windows environment, BusinessPhone Configuration Manager provides many new capabilities. Context-sensitive help with examples, and "wizard"-like utilities guide even the most inexperienced users through configuration tasks.

Templates can be set up, and easily modified, for fast and accurate configuration of extension-user data. The screen graphics can even emulate the system telephone keypad for users who are more comfortable with configuring the system in this way.

Using BusinessPhone Configuration Manager, users can adapt key system parameters to suit their own particular operational needs. Built-in security procedures, with the ability to define different levels of user access rights, protect sensitive areas of the system such as signalling schemes and trunk configuration from erroneous handling. For example, some users could be allowed to configure only their own extensions, while an administrator would have access to all extensions.

BusinessPhone Configuration Manager is available in two functionality packages. The Standard package provides configuration of the extension-user's own telephone functions, and allows the export and import of directory data. The Full package enables all telephone and system functions to be configured, including those for Direct Inward System Access and trunk lines. Configuration of BusinessPhone Hospitality and Call Centre solutions can also be carried out from the Full Configuration Manager package. The Standard package can be upgraded to the Full package if required.

BusinessPhone Configuration Manager offers migration to the full BusinessPhone operation and maintenance system (RASC) and integration with the MD110 DNA application. This makes BusinessPhone Configuration Manager a future-safe investment.

System features and functions

BusinessPhone Configuration Manager runs on a standard PC or workstation running under Windows NT/95/98. The application is enabled by plugging the appropriate copy protection device, with software licence, into the host PC.

Communication with the BusinessPhone main system is made via the existing V.24 serial interface, using the existing RASC communication protocol - so no further hardware or software is required.

When the user logs into the BusinessPhone Configuration Manager for the first time, the configuration database and the system to which it belongs can be selected from the pull-down list or from a line menu. Once the system has been selected, further options for configuration of extensions, system data, groups, and so forth, are also available from a menu or tree/grid view. The Standard package offers a more limited range of menu options.

System configuration data may be easily uploaded to and downloaded from the BusinessPhone system and several BusinessPhone systems may be configured from a single BusinessPhone Configuration Manager workstation.

Capacity / Limitations

The main functions provided by BusinessPhone Configuration Manager Standard package are:

- configuration of digital and analogue extensions
- directory data import and export
- context-sensitive, on-line help with explanations and examples of configuration tasks
- choice of menus, trees or graphical representation of system telephone on screen for user configuration

and with the Full package:

- overview and configuration of system data, including
  - class of service
  - TCD tables
  - traffic groups
  - PBX groups
  - call pick-up groups and their members, and
  - loudspeaker paging groups and their members
- configuration of common abbreviated dialling numbers
- overview of free and configured trunks, with the capability to define answering and rerouting positions
- handling of configuration template files
- data upload to and download from central system
- configuration of Hospitality and Call Centre functions.

Programming

none

Equipment

BusinessPhone system requirements

- BusinessPhone 250
- BusinessPhone 50.

Host PC requirements

IBM-compatible PC with:

- Pentium II 233 MHz processor
- 64 MB RAM
- 300 MB free hard disk space (2.2 GB recommended)
- one V.24 serial port
- Windows NT, Windows 95 or Windows 98.

Application options

- Standard or Full functionality packages.

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
SEA/EBBMP M.Plattner	SEA/EBBX/E	170/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved / Kontr/Checked		Datum/Date / Rev	Tillhör/Referens-File/Reference
SEA/EBBMP		99-07-15 A	ASB 150 02
		Database reference	
		170.fm	

DDI NUMBER TRANSLATION

Definition / Use

This feature supports an individual number translation of the external network DDI numbers to corresponding internal directory numbers and vice versa.

The reason for a number translation is relevant in cases, when the DDI number range provided by the public network does not fit, or is not available for use as internal number range within the system.

Further for a scenario where the PBX may be connected to two different network operators with different numbering plans there will be a possibility for usage of two different number translation tables.

Operation

The number translation is provided in following way:

A programmable cross reference table (including two different number translation tables) allows up to 400 internal directory numbers to be translated to corresponding external DDI numbers.

The number translation can be made both for incoming and outgoing call direction per dedicated trunk:

- an external DDI number is translated to the corresponding internal 1-4 digit directory number.
- an internal directory number is translated to the corresponding external (DDI) number when creating and providing the calling/connected line identification.

Capacity / Limitations

The feature is independent of used line or register signalling, i.e. available for all types of automatic incoming DDI calls.

It offers two different number translation tables and allows up to 400 internal directory numbers (max. 200 intervals) to be translated to corresponding external DDI numbers per number plan.

Programming

These commands are only accessable via RASC:

2260
DDI/CN* number translation

The number translation tables, ’DDI1’ and ’DDI2’, allow programming of two separate number translations for up to 400 internal directory numbers in up to 200 intervals.

Each trunk can be programmed (command 1804) with a number reference value to one or both of these translation tables. The contents of these tables are used for the translation of external DDI/CN numbers to corresponding internal directory numbers and vice versa.

If an external or internal number is not found in the tables, no translation can be done, and the ordinary number analysis will be performed for the received external DDI/CN number and the internal dir. number is used for the calling/connected identification services.

*) This feature will also be available for the private network calls, i.e. for CN numbers.

Table syntax

’Int. Dirno’

- 1-4 digit internal directory number
- the number must be defined in the system
- a number interval is defined by separating two directory numbers with a comma (e.g. 200,209)

’DDI1 no’,’DDI2 no’

- 1-8 digit external (DDI/CN) number used in the public and/or private number plan
- for a number interval only the first number has to be entered

1804
DDI number translation

The command is used to determinate an individual DDI number translation for a trunk.

The number value refers to the system defined individual DDI number translation tables ’DDI1’ and/or ’DDI2’. The contents of these tables are used for the translation of external DDI numbers to corresponding internal directory numbers and vice versa.

Number translation at public calls

Following numbers can be subject for a translation:

- receiving of DDI (called) number from network

- sending of calling and connected numbers to network

In case of VPN calls, where both the public and private calling / connected numbers may be translated and sent to the network, both ’DDI1’ and ’DDI2’ tables can be used for this purpose. In these cases it is assumed that the first referred table is used for the public number part.

Equipment

None.

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
SEA/EBBMP M.Plattner	SEA/EBBAX/E	160/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved	Kontr/Checked	Datum/Date / Rev	Tillhör/Referens-File/Reference
SEA/EBBMP		99-07-15 / B	ASB 150 02
		Database reference	
		160.fm	

DELAYED AUTOMATIC ANSWER

Definition

An unanswered external call directed to a facility with automatic answer is answered after a programmable delay time. During the waiting period the external caller hears ringing tone.

Use

The automatic answering time of functions like AA, Mailbox, DISA and Voice info can be modified, taking into account national requirements.

Operation

For facilities that provide an automatic answer on incoming external calls automatic answer may be delayed.

During this time period the external party hears ring tone.

Capacity

Following facilities are effected from this feature:

- AA (= Automated Attendant),
  see document 114/155 34-ASB 150 02 Uen.
- DISA (= Direct Inward System Access) with password control,
  see document 164/155 34-ASB 150 02 Uen
- CTI groups
  see document 153/155 34-ASB 150 02 Uen
- Information,
  see document 263/155 34-ASB 150 02 Uen
- Mailbox system,
  see document 340/155 34-ASB 150 02 Uen
- Voice message before answer,
  see document 523/155 34-ASB 150 02 Uen

Limitations

Only the first voice announcement is delayed. The external party hears all following voice announcements without any delay.

When a call is rerouted to a facility with automatic answer due to diversion on no reply , no delay of playing the first voice announcement occurs.

The feature "Delayed automatic answer" does not affect the following facilities:

- Operator queue
- ACD (= Automatic Call Distribution)

For these facilities it is possible to delay the automatic answer via separate commands.
See OPERATOR,
document 380/155 34-ASB 150 02 Uen and
ACD-GROUP,
document 105/155 34-ASB 150 02 Uen.

Programming

This command is programmable only via RASC

2110
Delayed automatic answer

This command states the minimum delay time for an external call when the call is automatically answered by a voice announcement.

valid data: 0 - 30 seconds

default data: 0 (= no delay)

Equipment

none

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
SEA/TB/MP C. Bertsch	SEA/TB/XE	161/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved	Kontr/Checked	Datum/Date / Rev	Tillhör/Referens-File/Reference
SEA/TB/MP		97-10-31 / C	ASB 150 02
		Database reference	
		161.fm	

DESKTOP MANAGER

Definition

Desktop Manager is a real-time personal efficiency package that handles incoming and outgoing calls within the personal computer's Windows environment.

Use

The productivity in an office environment is based on the applications running on a personal computer (PC). ASB 150 02 with Desktop Manager combines the two most efficient tools, the telephone and the PC. This saves the user extra minutes that may be spent on the important tasks.

Desktop Manager saves time on every call. It remembers regularly called numbers and it places them on screen whenever needed.

Operation

General

Desktop Manager is flexible, because every user can specify it to suit personal needs.

Desktop Manager can be integrated with other applications. OLE technology allows transfer of information between Desktop Manager and other applications. You can even invoke other applications without leaving Desktop Manager.

Structure

Desktop Manager is a stand-alone application for IBM PC-s and compatible computers supporting the Windows multi-tasking environment.

The Desktop Manager comprises 6 integrated modules.

- Phone Box
- Directory Book
- Notepad
- Scheduler
- Call Log
- TAPI driver software

The Modules

The Phone Box is the graphical interface to your telephone. Desktop Manager is built around a suite of modules that are linked via the Phone Box. All other modules such as the Directory and the Scheduler can be opened from the Phone Box with one mouse click.

The Phone Box dials numbers when dragged to a line button. Features can be programmed with the click of a mouse. Desktop Manager always checks the numbers dialled and received and brings up any relevant notes.

Up to 50 programmable buttons may contain most frequently called numbers as well as regularly used ASB 150 02 features. Just click with the mouse on the feature button to use them.

The Phone Box provides further buttons for parking calls, setting up conferences, transferring calls to your colleagues and diversions. The diversion button allows specification of the diversion target and the number of ring signals before diversion.

If you are unable to answer the telephone, ASB 150 02 allows you to leave information for calling extensions. The Desktop Manager offers an on-screen menu for selection of the relevant absence information.

Summary

- Line 1, Line 2 and Inquiry buttons
- 50 programmable speed-dialling buttons
- 18 programmable feature buttons with integration to ASB 150 02 for feature setup from the PC
- 5 program launcher buttons
- On-screen keypad with number display window

Directory

The Directory is linked to the Phone Box. The Directory is a personal contact list that can be viewed in card-index form or as a data table. You can add as much relevant data as you need, e.g. addresses, extra numbers, private notes, to keep all your customer details at hand. You can add, update or delete directory items with ease. Entries can be stored with a keyword for search capabilities within other modules.

Drag an entry to the line button in the Phone Box or double-click for dialling.

Notes

Desktop Manager has a built-in notepad that is coupled to the Directory. Telephone calls usually require some action, even if this is just making a note of the conversation. The notepad records details about a particular contact. Multiple note tabs per directory entry are supported. Entries can be date-and time-stamped.

When Desktop Manager „knows“ a customer’s name, it will automatically open the note associated with that name of the called party. Notes may be used in other Windows applications, e.g. word processor.

Call Log

Desktop Manager logs each incoming and outgoing call.

The Call Log shows

- whether calls were incoming or outgoing,
- whether they were internal or external,
- when they were made,
- how long they lasted,
- if there is a note attached to the called party.

The Call Log is useful for a number of purposes, e.g.:

- Information from the Call Log may be added to a function button using drag-and-drop.
- The Call Log has a filter and sorting function to show just the records that are of interest.
- The Call Log shows how many calls have been made to a particular company last month.
- The Call Log tracks not answered incoming calls. It tags them in red as a special „While you were out“ service. If ASB 150 02 is connected to the ISDN the number of the incoming caller will be logged as well.
- The information contained in the Call Log may be exported to other applications.
- User-definable maximum number of entries per log file keeps the stored data file slim.

Scheduler

Desktop Manager has a scheduler function that includes names and numbers of people to be called during the day. Desktop Manager pops up a window at the scheduled time. Desktop Manager will call the scheduled party after confirmation.

For staff whose full-time job is outbound calling, Scheduler can call the listed parties automatically one after the other. For a busy sales department this is a great time-saver. A pre-determined „clerical time“ sets

the gap between one call and the next so that the staff can make notes before carrying on with the next call. The scheduler can be paused at any time. The user is always in control of the technology.

Reminder

Sometimes calls have to be made at a specific time. The Scheduler takes care about that calls: a message box with rich details pops up on the screen at the specified time. The reminder may be used for other schedules as well, e.g. a scheduled meeting.

TAPI Driver Software

Desktop Manager is based on the Microsoft TAPI (Telephony Applications Programmers Interface) specification and includes the necessary TAPI driver software.

Capacity

The number of Desktop Managers that may be connected to ASB 150 02 is limited. The limitation depends on the seize of the system and on the other applications used. Not more than 100 Desktop Managers may be connected to ASB 150 02.

Limitations

The DTM may not be installed on one system, CTI is already running, or vice versa.

Programming

The chapter programming is related to ASB 150 02 only !

0155
Disable call state message to line ?

The transfer of information to the Desktop Manager is enabled when the value NO is programmed.

Equipment

System Telephone

All telephones of the Dialog 3000 series may be used for connection of the Desktop Manager.

- DBC 210
- DBC 211
- DBC 212
- DBC 213

Connection to the ASB 150 02

Some hardware is required for connection of the Desktop Manager to the ASB 1500 02.

- Desktop Adapter
- Cable for connection of the Desktop Adapter and the digital system phone
- Cable for connection of the PC to Desktop Adapter

For detailed information about the connection to the ASB 150 02, see document INSTALLATION INSTRUCTIONS for TAU D (47/1531-APD 101 02 Uen).

For detailed information about the installation of the software, see Installation Guide.

Personal Computer

Desktop Manager requires the following minimum configuration of personal computer:

- 486 DX 33 MHz processor
- 8 MB RAM
- 5 MB free hard disk space
- VGA Monitor
- MS-DOS 6.0 or higher
- Windows 3.1 or higher
- 1 free serial (COM) port

Documentation

To supply the end-user with detailed information see also the user documentation for the Desktop Manager application.

User’s Guide	EN/LZT BS 102 032
Installation Guide	EN/LZT BS 102 030
Quick Reference Guide	EN/LZT BS 102 037

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
SEA/TB/MP T.Preißner	SEA/TB/X	162/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved / Kontr/Checked		Datum/Date / Rev	Tillhör/Referens-File/Reference
SEA/TB/MP		98-01-26 A	ASB 150 02
		Database reference	
		162.fm	

DIRECT INDIALLING (DID)

Definition

DID denotes a function whereby a public network subscriber, by number dialling, can connect her-/himself to the wanted extension in ASB150 02. Connection from the public exchange to ASB 150 02 can be analogue or digital.

Use

DID to extension

DID enables all public network subscribers, without assistance from the OPERATOR, to access the relevant extension.

This means for the company a saving in the number of OPERATORs while at the same time it is easier for the callers to learn whether the called extension is free or busy.

Calls via OPERATOR

Subscribers who do not know the DID-number dial the normal number (OPERATOR number) of the PBX and are answered in the customary manner by the OPERATOR who then extends the call.

Diversion on busy and no reply

If a called extension does not answer, is busy or, for other reasons through-connection is not possible, it can be determined by programming whether the caller shall receive a tone message or whether the call shall be diverted to the OPERATOR.

Types of DID

DID is no uniform function, but is dependent on the signalling principle employed by the public exchange. Contact the supplier in this respect.

Operation

Calls from the public network

In most DID cases the public network subscriber dials the entire number including extension number in one sequence.

For DTMF-direct indialling the subscriber also dials the entire number, but in this case ASB 150 02 gives the subscriber (caller) a new dial tone as an invitation to dial an (optional) internal number.

In the event that the subscriber does not dial any digits within a predetermined period, the call will be diverted to the OPERATOR.

Calls to extensions

An incoming DID-call is signalled with the external ring signal at the extension telephone and, on answer, direct speech connection is established.

The called extension can initiate inquiry and transfer of the call as for all other external calls.

Called extension does not answer

After a predetermined time the call will be diverted to the OPERATOR or other selected answering position.

The extension is busy

The caller can receive busy tone directly or, if so programmed, can be diverted to the OPERATOR or another selected answering position.

Dialled number does not exist, is blocked or an incomplete number has been received

The caller can receive busy or vacant tone directly. If so programmed the caller can be diverted to the OPERATOR or another selected answering position.

Individual blocking of DID calls

You can block extensions individually to receive DID calls.

Calls to or diversion to the OPERATOR

If a name string has been programmed for the relevant trunk, the OPERATOR receives a message on the display stating that the call is on a DID-trunk.

If the call is diverted to the OPERATOR the right-hand side of the display will state who has been called and the reason for the diversion.

Capacity

The number of DID - trunks solely is limited by the number of trunk board positions .

The maximum number of trunks should not exceed 60.

Limitations

DID often means that the public network needs to be adapted for this function.

Different countries use different types of DID.

For connection purposes it must be clearly established whether the local DID-signalling is supported in ASB 150 02.

Many signal criteria are programmable in ASB 150 02, whereas others can demand other types of printed board assemblies (PBAs).

The external call number to the OPERATOR will usually need conversion to the call number used in ASB 150 02.

Some public exchanges send more or fewer digits than those in the number series used in ASB 150 02. Via command digits can be added to the external number or received first digits can be ignored.

Note that in order to be able to make incoming external calls to PBX-groups, fictive numbers etc., these must have the same number length as extension numbers.

Programming

To obtain an overview of the relevant commands for signalling, diversion (rerouting) prerequisites and operator directory numbers see TRUNK, facility description 486/155 34-ASB 150 02 Uen.

For the programming of answer (divertee) positions for diversion and rerouting see ANSWER POSITION(S) FOR TRUNKS, facility description 112/155 34-ASB 150 02 Uen.

The DID-lines are to be named to allow the operator to identify diverted (rerouted) calls.
See TELEPHONE DIRECTORY, facility description 481/155 34-ASB 150 02 Uen.

Individual blocking of DID calls

0164
DID to extension enabled

This command states whether the extension should receive DID calls or not.

Valid data: YES (DID calls are allowed)
NO (DID calls to the extension are blocked)

Default data:YES

See also chapter BLOCKING ROOM-TO-ROOM DIALLING AND DID in document HOTEL, 241/155 34-ASB 150 02 Uen.

Equipment

For DID the hardware for the trunks must be adapted to suit the relevant type of DID.

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
SEA/TB/MP T.Preißner	SEA/TB/XE	163/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved	Kontr/Checked	Datum/Date / Rev	Tillhör/Referens-File/Reference
SEA/TB/MP		97-10-31 / C	ASB 150 02
		Database reference	
		163.fm	

DIRECTORY NUMBERS

Definition

A directory number is a number that is assigned:

- A line position, that is an extension or a trunk
- A facility group number, ACD-number etc.

Directory numbers can have 1,2,3 or 4-digits. Directory numbers can be freely selected as long as they are not incompatible.

Use

All persons assigned a directory number can be called from extensions in the system.

All directory numbers can be assigned a name.

See facility description "TELEPHONE DIRECTORY", document 481/155 34-ASB 150 02 Uen.

Operation

See respective facility description
xxx/155 34-ASB 150 02 Uen.

Capacity

Each facility or hardware unit can be assigned one directory number only.

Limitations

Directory numbers must not be incompatible, for example, directory numbers 200 and 2000 cannot exist at the same time.

Programming

On initiation of the system extensions and trunks are assigned directory numbers automatically.

Extensions are assigned numbers from 200 and upwards.

Trunks are assigned numbers from 700 and upwards. All trunks are placed in one route and are assigned directory number 0.

If the system has an OPERATOR, directory number 9 will be assigned as internal call number to the OPERATOR queue.

See respective facility description
xxx/155 34-ASB 150 02 Uen.

Assigned directory numbers can be changed.

To change directory numbers of extensions

5601
Assign extension number

Using this command it is possible to allot the required number to an extension's line position.
If this line position already has a directory number it will be overwritten. Command 5902 will read the directory number of a certain line position.
However, references to previous numbers will remain. The references are to be deleted or replaced by the new number.

5602
Alter extension number

With this command it is possible to change an extension's directory number.
If one wishes to change the number to a new number, that is in conflict with the old number, this cannot be executed directly. In such a case first replace the number with a random free number and then replace this number with the desired number.

5603
Change an extension's line position

Is used when two extensions are to change position and retain their directory numbers as well as all programmed categories and functions

```
10 Jul 14:40   +15°
SWAP EXTENSION NO     5603             >
 backward  forward     c/i      return
```

> Press **Enter**

```
10 Jul 14:40   +15°
SWAP DIR. NO = zzzz WITH DIR. NO = qqqq
 backward  forward     c/i      return
```

zzzz Enter extension number 1

qqqq Enter extension number 2

5604
Change of number series for extension

Alter the number series for an extension number. This command is to be used only if you wish to alter the entire existing number series on system start. Use the command in an existing system. Enter the lowest extension number in the new number series

For other directory number changes see the following functions:

- ACD-group.
- Background music.
- Trunk line.
- Fictive number.
- PBX-hunting.
- Music-on-hold.
- Voice message.
- Answer group.
- Operator.
- Route.
- Paging.
- Common short numbers.

Display number series:

Using this group of commands you can read out which directory numbers that are used in the system.

5801 - 5813
Reading of numbering series

This is a group of commands by which it is possible to read which directory numbers are used in the system.

All commands in the group are presented and administered in the same way.

5801 Show total survey
5802 Show extension
5803 Show trunk
5804 Show route
5805 Show PBX-group
5806 Show background music
5807 Show ACD-group
5808 Show pick-up group
5809 Show voice answer
5810 Show fictive number
5811 Show operator
5812 Show paging

5813 Show short no. series

```
10 Jul 14:40   +15°
SHOW TOTAL SURVEY     5801             >
 backward  forward     pf_3      return
```

Press **Enter**

```
10 Jul 14:40   +15°
PAGE:  nn  info     xxxx xxxx xxxx xxxx
 backward  forward     pf_3      return
```

nn	State which page is shown. To scroll (step) from page to page use the following keys:
info	If more pages exist, CONTINUED is shown. If last page, LAST is shown
xxxx	Directory numbers are shown in number order

Menu keys:

backward	Step to previous page
forward	Step to next page
pf_3	Erases a displayed error message
return	returns to previous display image

If the directory numbers are in numerical order the interval with the lowest and highest numbers separated by a hyphen will be shown.

Example: 2000 - 2020

If the directory numbers are dispersed these are shown separated by a comma.

Example: 2234,2241

5901
To read directory number/facility

```
10 Jul 14:40   +15°
DIR.NO -> FACILITY    5901             >
 backward  forward     c/i       return
```

Press **Enter.**

```
10 Jul 14:40   +15°
DNO:aaaa PI:bbcc dd ffffffffffff   h
 backward  forward     pf_3      return
```

aaaa	Enter facility's directory number
bbcc	State board number and individual number
dd	Telephone type/trunk type 00 = No telephone 01 = ECONOMY (DBC 751) 02 = STANDARD (DBC 752) 03 = EXECUTIVE (DBC 753) 06 = LINE BOX 07 = STANDARD (DBC 755) 08 = OPERATOR's Console (DBC754) 12 = GUEST PHONE (DBC 751H) 15 = Analogue telephone 20 = BASIC (DBC 199) 21 = ECONOMY (DBC 601) 22 = STANDARD (DBC 631) 23 = EXECUTIVE (DBC 662) 24 = OPERATOR's Console (DBC 663) 25 = STANDARD (DBC 202, DBC 212) 26 = EXECUTIVE (DBC 203) 27 = EXECUTIVE and 1 KEY PANEL 30 = EXECUTIVE and 2 KEY PANELS 35 = ECONOMYplus (DBC 201,DBC 211) 36 = EXECUTIVE (DBC 213) 37 = OPERATOR's Console (DBC 214) 38 = BASIC (DBC 210) 65 = Trunk 67 = DID-trunk
f..f	Explanatory text
h	B = Directory number is blocked

Menu keys:

backward Step to previous page

forward Step to next page

pf_3 Erases a shown error message

return returns to previous display image

5902
To read line position - directory number

```
10 Jul 14:40  +15°
HW-INDIV.-> DIR.NO    5902              >
 backward  forward     c/i      return
```

Press **Enter**

```
10 Jul 14:40   +15°
PI:aabb DNO:cccc dd ffffffffffffff   h
 backward  forward     pf-3      return
```

aabb Enter line position to be checked board position 00 - 63 and individual 00 - 15

cccc State position's directory number

dd Telephone type/trunk type
00 = No telephone
01 = ECONOMY (DBC 751)
02 = STANDARD (DBC 752)
03 = EXECUTIVE (DBC 753)
06 = LINE BOX
07 = STANDARD (DBC 755)
08 = OPERATOR's Console (DBC754)
12 = GUEST PHONE (DBC 751H)
15 = Analogue telephone
20 = BASIC (DBC 199)
21 = ECONOMY (DBC 601)
22 = STANDARD (DBC 631)
23 = EXECUTIVE (DBC 662)
24 = OPERATOR's Console (DBC 663)
25 = STANDARD (DBC 202, DBC 212)
26 = EXECUTIVE (DBC 203)
27 = EXECUTIVE and 1 KEY PANEL
30 = EXECUTIVE and 2 KEY PANELS
35 = ECONOMYplus (DBC 201,DBC211)
36 = EXECUTIVE (DBC 213)
37 = OPERATOR's Console (DBC 214)
38 = BASIC (DBC 210)

65 = Trunk
67 = DID-trunk

f..f Explanatory text

h B = Directory number is blocked

Menu keys:

backward Step to previous page

forward Step to next page

pf_3 Erases a shown error message

return returns to previous display image

5701
Blocking of directory numbers

Using this command you can block extensions, trunk lines and certain other facilities.

Equipment

None.

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
SEA/EBBMP M.Plattner	**SEA/EBBX/E**	**164/155 34-ASB 150 02 Uen**	
Dokansv/Godkänd - Doc respons/Approved	Kontr/Checked	Datum/Date / Rev	Tillhör/Referens-File/Reference
SEA/EBBMP		**99-07-15** **D**	**ASB 150 02**
		Database reference	
		164.fm	

DISA
WITH PASSWORD CONTROL

Definition

DISA (=Direct inward system access) with Password Control means that an external caller can dial via DTMF to a defined directory number. He/She has to dial his/her extension number and a password. After that he/she can make outgoing calls and the costs will be transferred to the individual extension number.

Use

DISA with Password Control is used for persons who work externally for a company and want to make business-calls, but the costs will be transferred to e.g. the users extension number - or/and a special account code.

The external caller receives voice prompts, leading him through the whole procedure step by step.

Operation

After the external caller has dialled the DISA-directory number he receives back a voice prompt from the system. Via DTMF tones he has to enter his extension number. The access to the feature is only allowed if following items apply:

- definition of a namestring for the DISA extension in the internal directory book
- valid ACOS
- valid authorisation code (0000 is not allowed)

If all inputs are fullfilled, the external caller gets all the services related to his extension number in order to build up external calls. (Traffic group, TCD and Common abbreviated number COS.) Before the caller gets the internal dial tone to dial the desired external number, he gets a voice prompt to classify, if the call should be marked by an account code or not.
The external caller is then allowed to select a trunk route, which is defined in his Traffic group, to dial an external number, which is open in his TCD or dial a common abbreviated number, which is defined in the Common abbreviated number COS.

The cost of the call will be transferred to the individual extension position.

In any situation where the external caller has been prompted by the voice announcements and the caller does not act within the registered timeout interval (4 seconds) the caller will receive the last voice anouncement again. If the caller does not act in the second try, he will be rerouted to a programmable exit-position (e.g. operator). If no exit position is defined the external caller will be routed to the reroute position of the relevant trunk.

An external caller who knows the procedure does not have to wait until all the voice prompts have been sent. The caller may enter further digits also during the voice prompts, which then will be disconnected immediately.

For people who often use the DISA function, there is no need to go through all voice prompts. In that case it is possible to dial all digits at once. If wrong digits are included in the string, digits are missing or there is a break in the digit string - longer then registered timeout - the external caller is routed back to the voice prompts. In that case all further digits of the digit string are ignored.

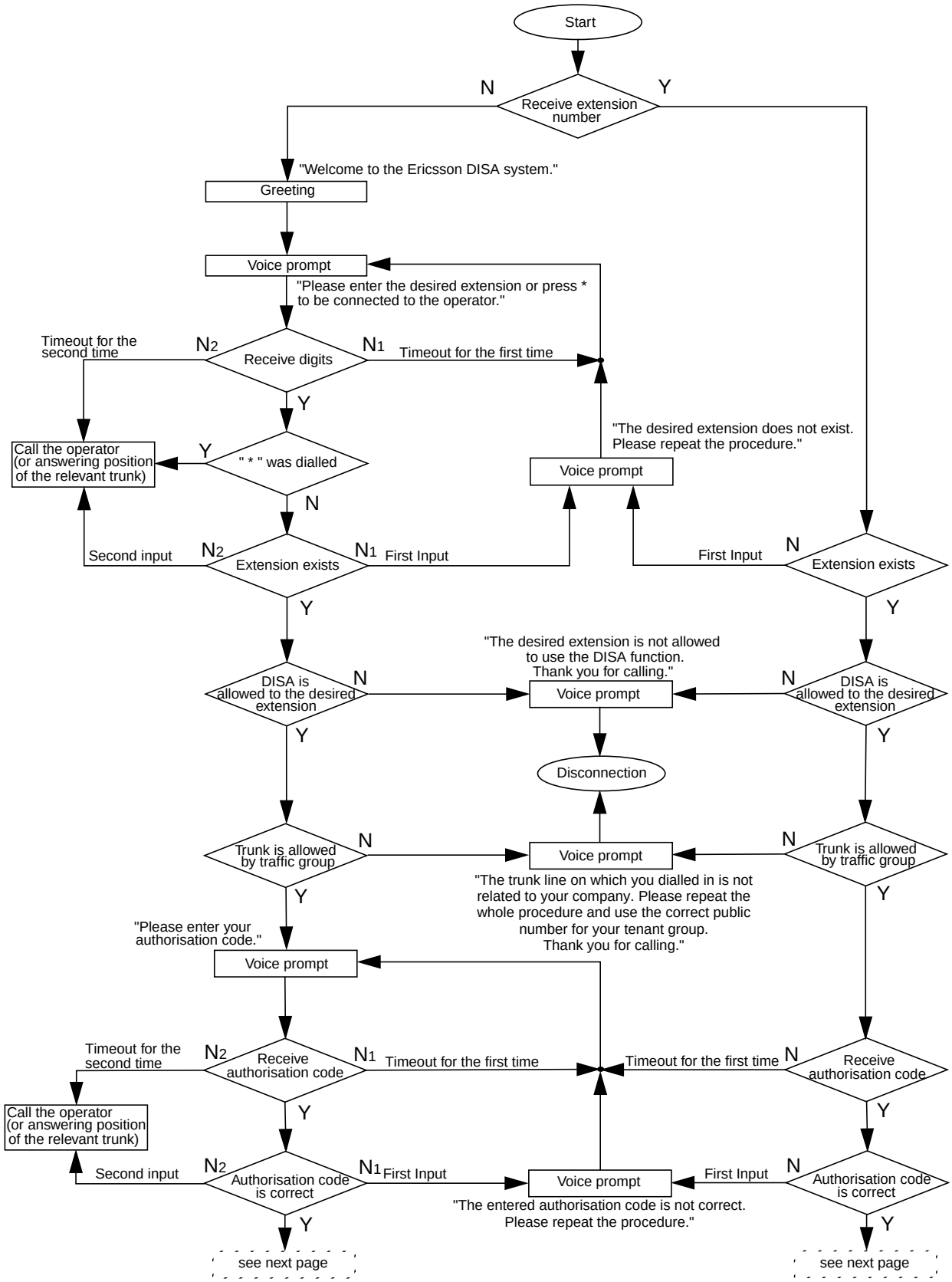
The DISA directory number is accessible externally for all members in the ASB15002 system - having a name defined within the interal directory book - independent of whether the system is configured as a multi-tenant system or not. To prevent a misuse of the DISA system in a multi tenant configuration, the caller is only allowed to use trunk lines related to his traffic group.

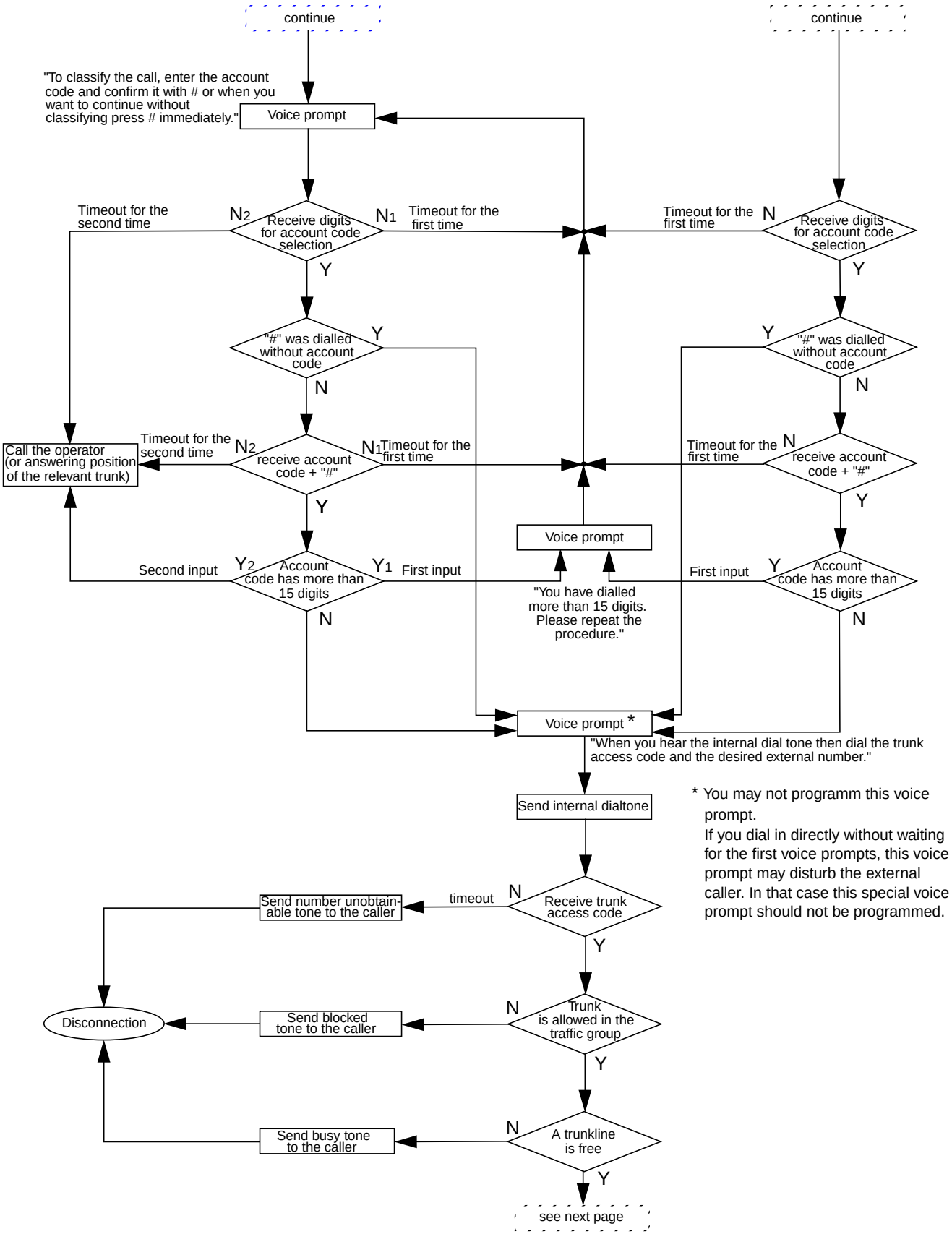
On the next page there is a diagram, which shows how DISA works with Password Control.

Delayed Automatic Answer for the DISA-function

see DELAYED AUTOMATIC ANSWER, document 160/155 34-ASB 150 02 Uen.

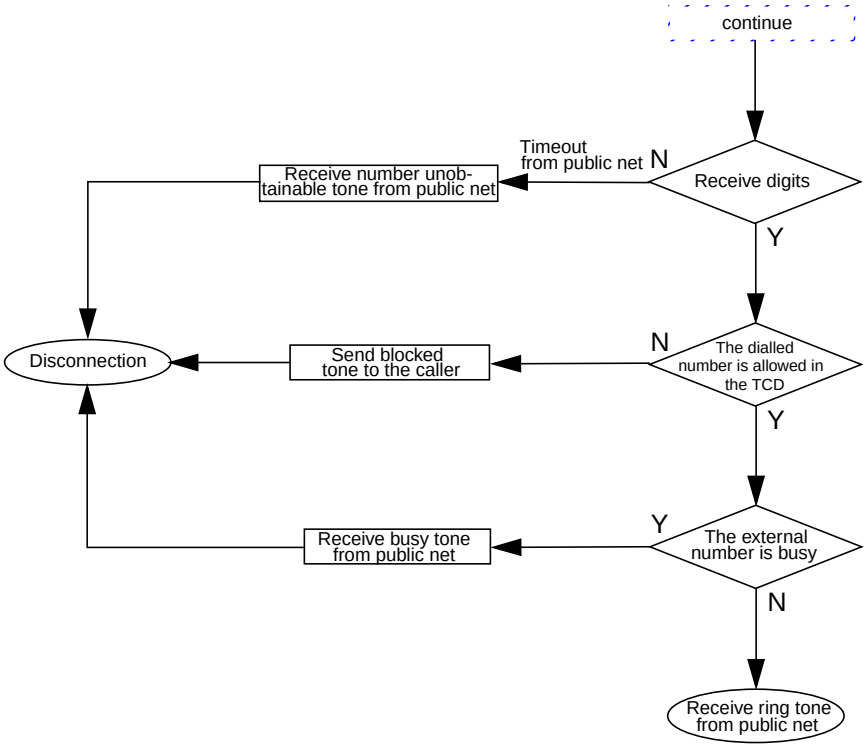
Note: This procedure is described with the operator as exit position


Start
Receive extension number
N
Y
"Welcome to the Ericsson DISA system."
Greeting
Voice prompt
"Please enter the desired extension or press * to be connected to the operator."
Receive digits
N2
N1
Timeout for the second time
Timeout for the first time
Y
" * " was dialled
Call the operator (or answering position of the relevant trunk)
"The desired extension does not exist. Please repeat the procedure."
Voice prompt
Second input
Extension exists
First Input
"The desired extension is not allowed to use the DISA function. Thank you for calling."
DISA is allowed to the desired extension
Disconnection
Trunk is allowed by traffic group
"The trunk line on which you dialled in is not related to your company. Please repeat the whole procedure and use the correct public number for your tenant group. Thank you for calling."
"Please enter your authorisation code."
Receive authorisation code
Authorisation code is correct
"The entered authorisation code is not correct. Please repeat the procedure."
see next page



* You may not programm this voice prompt.
If you dial in directly without waiting for the first voice prompts, this voice prompt may disturb the external caller. In that case this special voice prompt should not be programmed.

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
		164/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved	Kontr/Checked	Datum/Date	Rev / Tillhör/Referens-File/Reference
		99-07-15	**D**



Capacity

The number of external calls served by the DISA-function depends on the free resources of VMU-HD/ MFU-voice-channels and free DTMF-receivers in the system. All extensions and the operator can be programmed to use the DISA-function.

Limitations

- It is only possible to change the authorisation code internally via telephone.
- Authorisation code 0000 cannot be used for DISA feature.
- In order to use the DISA function, the user must have also an assigned name in the internal directory book beside the correct class of service .
- The DISA function can only be used by external callers.
- The DISA function can only be used for one external call. If the caller wants to make further calls he has to go through the whole procedure again.
- If you want to dial-in to the DISA system via a stored number including all DISA-Inputs (DISA-number + Extension number + Authorisation code + Account code), you have to take care that the system has enough time to identify all the different parts of the string numbers.
  Hint: Insert "wait-digits" in the stored string. You should enter 2 "wait-digits" at least after each number.
- The caller's telephone must be equipped to send DTMF tones.
- When using Line Signals (command 1201)
  06 (Australia, standard) or
  21 (Standard with detection of disconn. tone)
  the maximum time the caller is connected to the desired party is 10 minutes.

Programming

Commands executable only via RASC

5425
Create DISA with password

To create a DISA facility command 5425 must be called.

5525
Delete DISA with password

To delete a DISA facility command 5525 must be called.

5625
Alter DISA with password

To alter a DISA facility command 5625 must be called.

3081
Access to DISA allowed?

This command assigns the DISA function to a defined Class of Service (COS).

8801
DISA error reroute position

To define an EXIT- position for DISA with Password Control.

Possible EXIT-positions for DISA:

- OP-queue
- Operator
- Extension
- PBX
- ACD

7801
Register reservation

With this command it is possible to reserve each RSU-group (Register Signalling Unit) for one register signalling application. The 2 different applications are traffic register signalling and voice services. If none of these is specified, both will be handled.

Values: 0 = No RSU-groups reserved (default)
1 = Reserved for traffic register signalling
2 = Reserved for voice services

This command is only executable via the telephone set.

4423
DISA voice prompts

This command is used to record the new DISA announcement group.

Level 1
Enter the DISA Voice Prompt

```
10 Jul 14:40   +15°
DISA VOICE PRMPT 0-9   4423          >
 backward  forward              return
```

Press ENTER to go to next data level.

Level 2
Select the Voice Prompt

```
10 Jul 14:40   +15°
DISA PROMPT NUMBER:     z
                                return
```

z number of voice prompt. (0 - 9)

List of available voice prompts for the DISA system:

0 Identify instruction

"Please enter the desired extension or press * to be connected to the operator."

1 Authority instruction

"Please enter your authorisation code."

2 Account instruction

"To classify the call, enter the account code and confirm it with # or, if you want to continue without classifying, press # immediately"

3 Trunk access instruction

"When you hear the internal dial tone, dial the trunk access code and the desired external number"

4 Wrong identify

"The desired extension does not exist. Please repeat the procedure."

5 Wrong DISA access

"The desired extension is not allowed to use the DISA function. Thank you for calling."

6 Wrong traffic group

"The trunk line on which you dialled-in is not related to your tenant group. Please repeat the whole procedure and use the correct public number for your tenant group. Thank you for calling."

7 Wrong authority

"The entered authorisation code is not correct. Please repeat the procedure."

8 Wrong account

"You have dialled more than 15 digits. Please repeat the procedure."

9 Welcome to DISA

"Welcome to the Ericsson DISA system."

Press ENTER to accept data level 2 and to step to data level 3.

Level 3
Selection of functions

```
10 Jul 14:40   +15°
zzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzzz
 record     play     erase     return
```

zzzzzzz Text for voice prompt (see above)

List of available menu buttons:

F1	record	recording a voice prompt
F2	play	playing a voice prompt
F3	erase	erasure of voice recording
F4	return	return to data level 2

Press ENTER to accept and step to the next voice prompt.

0101
Facility COS

Assign the extension number using the DISA-function to the correct COS.

```
10 Jul 14:40   +15°
FACILITY COS 0 C     0101    xxxx   zz
 backward   forward     c/i      return
```

xxxx Enter directory number

zz Enter relevant facility COS number.
(value = 0-15)

0102
Traffic group

Assign the extension number using the DISA-function to the correct Traffic group.

```
10 Jul 14:40   +15°
Traffic group   C  0102    xxxx     zz
 backward  forward     c/i       return
```

xxxx Enter extension's directory number

zz Enter selected traffic group category
(0 - 15)

0103
TCD-DAY COS

Assign the extension number using the DISA-function to the correct TCD-Day.

```
10 Jul 14:40   +15°
TCD-DAY COS     C    0103 xxxx        z
 backward  forward     c/i      return
```

xxxx Enter extension's directory number

z Enter relevant day category (0 - 8).
Step to command 0104

0104
TCD-NIGHT COS

Assign the extension number using the DISA-function to the correct TCD-Night.

```
10 Jul 14:40   +15°
TCD-NIGHT COS   C    0104 xxxx        z
 backward  forward     c/i      return
```

Enter the extension directory number

z Enter relevant night category (0 - 8)

0105
Common short number COS

Each extension can be assigned an abbreviated number category

```
 10 Jul 14:40   +15°
COMMON SHORT NO COS C  0105  xxxx      z
  backward  forward     c/i      return
```

xxxx Enter the extension directory number.

z Enter relevant category (0 - 3).
Default data = 0

Equipment

The DISA function can be used with a VMU-HD or MFU board.

The DISA function requires available DTMF resources. DTMF registers are positioned on the following boards:

- BTU-D (8 DTMF receivers)
- REG (8 DTMF receivers)

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
SEA/EBBMP M.Plattner.	SEA/EBBX/E	165/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved	Kontr/Checked	Datum/Date / Rev	Tillhör/Referens-File/Reference
SEA/EBBMP		99-07-15 / E	ASB 150 02
		Database reference	
		165.fm	

DIVERSION DIRECT

Definition

Diversion Direct means that all calls to physical extensions respectively to fictive numbers are diverted to a preprogrammed divertee (answering) position.

Use

Diversion Direct is used for secretary connection or if a specific person is to deal with ones incoming calls.

Diversion can be ordered to the following types of directory numbers:

- Automated Attendant
- CN number
- Common abbreviated number (not applicable for fictive numbers)
- Common mailbox
- Extension number
- Fictive number
- Group - (PBX) hunting number
- OPERATOR number
- Paging number
- Voice answer number
- ACD group (see command 2057)

It is possible to distinguish between different cases for direct diversion, dependent on whether it is an incoming external or an internal call. Thus it is possible to programm that e.g. all incoming external calls should be diverted to a secretary, but internal calls should not be diverted.

An incoming call from a tie line will also be handled as an external call.

An incoming CN call will be handled as it is programmed via the command 2084 (see also chapter PROGRAMMING in this document)

For more information regarding Corporate Networking, see NETWORKING, document 365/155 34-ASB 150 02 Uen.

Bypass diversion direct

Direct diversion on physical extensions can be bypassed, but not for fictive numbers.
See BYPASS CALL DIVERSION AND FOLLOW ME, document 121/155 34-ASB 150 02 Uen.

External diversion

External diversion via the common abbreviated numbers to an optional public network subscriber is allowed for physical extensions, but not for fictive numbers having activated direct diversion.

NOTE: If none of the external parties can supply a clearing signal, the transit connection will be time supervised and the call will be disconnected automatically after approximately 10 minutes.

Operation

ECONOMYplus -, STANDARD - and EXECUTIVE Telephones

To order diversion

- From idle state press **2nd** and **Diversion** key
- **Diversion** lamp lights and glows steadily for confirmation

Display call forwarding status on idle instrument

If the display set is in idle state, the user will be informed through the display if direct diversion is

activated. The feature distinguishes between the following information:

- Call Diversion Direct for incoming internal calls
- Call Diversion Direct for incoming external calls (Available for DID-calls)
- Call Diversion Direct for both incoming internal and external calls.

EXECUTIVE Telephone

Direct diversion external

```
10 Jul 14:40   +15°
DIVERSION EXTERNAL    4711->81004712
  directory             redial     prog
```

Direct diversion internal

```
10 Jul 14:40   +15°
DIVERSION INTERNAL    4711->81004712
  directory             redial     prog
```

Direct diversion internal & external

```
10 Jul 14:40   +15°
DIVERSION             4711->81004712
  directory             redial     prog
```

STANDARD Telephone

Direct diversion external

4-digit number plan:

```
10 Jul 14:40   +15°
DIV. EXT.  4711->4712
```

8-digit number plan (only to CN number):

```
10 Jul 14:40   +15°
DIV. EXT.  ->81004712
```

Direct diversion internal

4-digit number plan:

```
10 Jul 14:40   +15°
DIV. INT.  4711->4712
```

8-digit number plan (only to CN number):

```
10 Jul 14:40   +15°
DIV. INT.  ->81004712
```

Direct diversion internal & external

4-digit number plan:

```
10 Jul 14:40   +15°
DIVERSION 4711->4712
```

8-digit number plan (only to CN number):

```
10 Jul 14:40   +15°
DIVERSION ->81004712
```

Cancellation of diversion

- From idle state press **2nd** and **Diversion** key
- **Diversion** lamp extinguishes for confirmation

Call to party with ongoing diversion

The caller receives the following display information:

EXECUTIVE Telephone

```
SMITH JOHN              81002004
JOHNSON ANDREW          81202001  FREE
                      save
```

STANDARDTelephone

```
SMITH J   81002004
JOHNSON A 81202001 F
```

The top row shows the dialled directory number.
The second row shows to whom diversion has taken place (called party) and the latter's traffic status.

Incoming diverted call

The display on the telephone at the divertee position shows the following image before answer

EXECUTIVE Telephone

```
SMITH JOHN              81002001
JOHNSON ANDREW          81202003  CALLING
directory               redial      prog
```

STANDARD Telephone

```
SMITH J   81002001
JOHNSON A 81202003 C
```

The top row shows from whom the call has been diverted.
The second row shows the caller.

BASIC Telephones

To order diversion

- Lift handset, wait for dial tone
- Press programmable **Diversion** key or dial *** 21 #**
- **Diversion** lamp lights and glows steadily for confirmation and special dial tone is received for confirmation. If the order is rejected congestion tone will be supplied

To cancel diversion

- Lift handset, wait for special dial tone
- Press programmable **Diversion** key or dial **# 21 #**
- **Diversion** lamp extinguishes for confirmation and normal dial tone is received for confirmation.

Analogue Telephones

To order diversion

- Lift handset, wait for dial tone
- Dial *** 21 #**
- Special dial tone is received for confirmation. If the order is rejected congestion tone will be supplied

To cancel diversion

- Lift handset, wait for special dial tone
- Dial **# 21 #**
- Normal dial tone is received for confirmation

Fictive Numbers

To order/cancel diversion

Programmable via RASC, see FICTIVE NUMBER, document 201/155 34-ASB 150 02 Uen.

Capacity

Only one divertee (answering) position per directory number can be programmed.

This divertee position must be the same as used for the functions diversion on no reply and diversion on busy.

Limitations

Calls that have been presented already are not affected on activation of diversion.

Calls via external line keys or intercom lines are not affected by diversion.

An extension with ongoing diversion that is a member of an extension (PBX) group will be marked absent from the group.

A call that has already been diverted once is not affected by diversion direct.

It is only possible to activate Diversion while the telephone is in idle state.

No support of S-bus terminals as diversion address, because they are dedicated to be trunk individuals.

Display call-forwarding status on idle instrument

It is not possible to show all information on the display. Therefore some kind of priority is defined. The following list shows the priority starting with the highest priority at the top to the lowest priority at the bottom:

- Info display
- Direct diversion

Programming

0109
Direct diversion?

This command represents the actual state of the diversion key on the instrument.

```
10 Jul 14:40   +15°
DIRECT DIVERSION ?    0109 xxxx     z
 backward  forward     c/i      return
```

xxxx	Enter extension's directory number
z	Enter relevant function: Y = Yes N = No (default data)

To activate the diversion-key, check if diversion is programmed for incoming external calls (see command 0156) or / and internal calls (see command 0159).

Then step to command 0112.

0112
Diversion address

The answering position must be programmed.

NOTE: This must be the same for all types of diversions

```
10 Jul 14:40   +15°
DIVERSION ADDRESS      0112      xxxx     >
 backward  forward      c/i       return
```

xxxx Enter extension's directory number

Press ENTER

```
10 Jul 14:40   +15°
                  zzzzzzzz    0112  xxxx
 backward  forward      c/i       return
```

zzzzzzzz Enter answering position's directory number

After that it must be programmed, what kind of incoming calls should be diverted (incoming external or internal calls). Step to command 0156 or / and 0159.

0156
Direct diversion external

If incoming external calls should be diverted, command 0156 must be programmed.

NOTE: Valid only for DID-calls.
E.g.: Transferring an external call to an extension, which has activated "direct diversion for incoming external calls", will NOT be affected via this command.

```
10 Jul 14:40   +15°
DIRECT DIV EXT ?     0156    xxxx    z
 backward  forward      c/i      return
```

Enter extension's directory number

z Enter relevant function:
Y = Yes
N = No (default value)

Step to command 0159.

0159
Direct diversion internal

If incoming internal calls should be diverted, command 0159 must be programmed.

```
10 Jul 14:40   +15°
DIRECT DIV INT ?     0159    xxxx    z
 backward  forward      c/i      return
```

Enter extension's directory number

z Enter relevant function:
Y = Yes
N = No (default value)

0172
Diversion on not available internal

This command is used to activate diversion on not available for internal calls. Diversion on not available could be a result of a not attainable cordless.

If no diversion address is specified, the diversion is inactive.

```
10 Jul 14:40   +15°
DIV NOT AVAIL INT.   0172  xxxx   zzzzzzzz
backward    forward      c/i      return
```

xxxx Enter common directory number

zzzzzzzz Enter diversion address

Note: After a call diversion "on not available", no repeated call diversion is possible any more.

0173
Diversion on not available external

This command is used to activate diversion on not available for external incoming calls. Diversion on not available could be a result of a not attainable cordless.

If no diversion address is specified the diversion is inactive.

```
10 Jul 14:40   +15°
DIV NOT AVAIL EXT.    0173  xxxx   zzzzzzzz
backward    forward      c/i      return
```

xxxx Enter common directory number

zzzzzzzz Enter diversion address

Note: After a call diversion "on not available", no repeated call diversion is possible any more.

0176
Call diversion to a CN number allowed ?

This command defines whether an extension is allowed to activate call diversion to a private network number.

```
10 Jul 14:40   +15°
DIVERSION TO CN?     0176     xxxx     z
 backward  forward       c/i      return
```

Enter extension's directory number

z Enter relevant function:
Y = Yes
N = No (default value)

2084
Type of network call handling

The command defines whether network calls shall be handled as internal or external (tie line) calls with corresponding categories.

Example: Rerouting categories (on busy) for actual incoming trunk shall be deactivated (internal call handling) to enable proper 'call back on busy handling' from the network side.

Individual programming

By means a system telephone the divertee address can be programmed individually.

See document FACILITY DESCRIPTION (155 34-ASB 150 02Uen).

2057
Follow me/Diversion to ACD number

The command defines whether follow me, direct diversion or diversion on busy to an active ACD group is allowed - on default the command is deactivated, that means follow me, direct diversion respective diversion on busy is not allowed.

See the following documents for more information concerning the specific topic:

ACD group general
Doc.no.: 105/155 34-ASB 150 02 Uen.

Diversion on Busy
Doc.no.: 166/155 34-ASB 150 02 Uen.

Diversion on No Reply
Doc.no.: 167/155 34-ASB 150 02 Uen.

Follow me
Doc.no.: 202/155 34-ASB 150 02 Uen.

2530
Diversion address for fictive numbers

With this command the single fictive numbers are created. Programming the diversion address means activation of direct diversion, see FICTIVE NUMBER, document 201/155 34-ASB 150 02 Uen.

Equipment

Direct diversion from fictive numbers is protected by the FECU. Without FECU no diversion is executed and a FECU warning is generated.

For detailed description see Facility Description - General, document 155 34-ASB 150 02 Uen.

DIVERSION ON BUSY

Definition

Diversion on busy means that on a call to a busy extension diversion takes place to a divertee position if one has been programmed.

Use

The function is used when one wishes to be certain that call attempts will be answered, even when busy tone is encountered.

Diversion can be ordered to the following types of directory numbers:

- CN number
- Common abbreviated number
- Extension number
- Fictive number
- Group - (PBX) hunting number
- OPERATOR number
- Paging number
- Voice answer number
- ACD group (see command 2057)

It is possible to distinguish between different cases for diversion on busy, dependent on whether it is an incoming external or internal call.
Example:
Call diversion on busy at a defined extension should only take place for incoming external calls. The internal callers will encounter busy and may activate automatic call-back.
An incoming call from a tie line will also be handled as an external call.

An incoming CN call will be handled as it is programmed via the command 2084 (see also chapter PROGRAMMING in this document)

For more information regarding Corporate Networking, see NETWORKING,
document 365/155 34-ASB 150 02 Uen.

External diversion

As an external abbreviated number can be selected as divertee position, calls can be connected to an optional public network subscriber.

Operation

An extension user cannot activate or deactivate the function by himself.

Calling party

A caller, having a display, can see that the call is diverted in that called party number and name are shown in the top row and the connected number in the second row.

EXECUTIVE Telephone

```
JOHNSON ANDREW          12002003
SMITH JOHN              12002005  FREE
                        save
```

STANDARD Telephone

```
JOHNSON A 12002003
SMITH J   12002005 F
```

Receiving party

The divertee position receives the following display image with caller on the second row and the party from whom diversion takes place on the top row

EXECUTIVE Telephone

```
SMITH JOHN              12002005
JOHNSON ANDREW          12002003  CALLING
directory                redial       prog
```

STANDARD Telephone

```
SMITH J   12002005
JOHNSON A 12002003 C
```

Capacity

Each extension in the system can be assigned a divertee position.

The divertee position is common for all types of diversion, direct, busy and no reply.

Limitations

If the divertee position is busy also, there will be no diversion and the caller receives busy tone.

For orders type call-me, voice or text messages and for automatic callback and intrusion the dialled number is monitored always.

Within a Corporate Network the maximum number of Repeated Call Diversions is 3.

Programming

First it must be programmed, what kind of incoming calls should be diverted (incoming external or internal calls). Step to command 0111 and 0158.

0111
State type of diversion on busy for internal calls

The extension must be programmed for diversion on busy for incoming internal calls

```
10 Jul 14:40   +15°
DIV.ON BUSY INT.?   0111   xxxx      z
 backward  forward     c/i      return
```

xxxx	Enter extension's directory number
z	Enter relevant function: Y = Yes. N = No (default data)

Step to command 0158.

0158
State type of diversion on busy for incoming external calls

The extension must be programmed for diversion on busy for incoming external calls.

```
10 Jul 14:40   +15°
DIV.ON BUSY EXT.?   0158   xxxx      z
 backward  forward     c/i      return
```

xxxx	Enter extension's directory number
z	Enter relevant function: Y = Yes. N = No (default data)

Step to command 0112.

0112
State divertee position

For each extension that is to have access to the diversion facility it is necessary to program a divertee position.

```
10 Jul 14:40   +15°
DIVERSION ADDRESS       0112    xxxx     >
 backward  forward     c/i      return
```

xxxx Enter extension's directory number
Press ENTER

```
10 Jul 14:40   +15°
                  zzzzzzzz    0112  xxxx
 backward  forward     c/i      return
```

zzzzzzzz Enter answering position's directory number

0176
Call diversion to a CN number allowed ?

This command defines if an extension is allowed to activate call diversion to a private network number.

```
10 Jul 14:40   +15°
DIVERSION TO CN?     0176     xxxx     z
 backward  forward       c/i      return
```

Enter extension's directory number

z Enter relevant function:
Y = Yes
N = No (default value)

2084
Type of network call handling

The command defines whether network call shall be handled as internal or external (tie line) calls with corresponding categories.

Example: Rerouting categories (on busy) for actual incoming trunk shall be deactivated (internal call handling) to enable proper 'call back on busy handling' from network side.

Individual programming

By means of an ECONOMYplus , STANDARD or an EXECUTIVE Telephone the user can her-/himself program the address of the divertee position.

See document FACILITY DESCRIPTION (155 34-ASB 150 02 Uen).

2057
Follow me/Diversion to ACD group number

The command defines whether follow me, direct diversion respective diversion on busy to an active ACD group is allowed - on default the command is deactivated, that means follow me, direct diversion respective diversion on busy is not allowed.

See following documents for closer information concerning the specific topic:

ACD group general
Doc.no.: 105/155 34-ASB 150 02 Uen.

Diversion Direct
Doc.no.: 165/155 34-ASB 150 02 Uen.

Diversion on No Reply
Doc.no.: 167/155 34-ASB 150 02 Uen.

Follow me
Doc.no.: 202/155 34-ASB 150 02 Uen.

Equipment

None.

DIVERSION ON NO REPLY

Definition

Diversion on no reply means that a call that has rung at a free extension for a predetermined time will be diverted to another preprogrammed party.

Use

The function is intended for use when it is desired that a call be diverted automatically if the caller receives no reply within a certain time, for example if the called party has temporarily left the room.
If an extension user plans to be absent for some time he/she should activate diversion direct or supply information to this effect.
Diversion can be ordered to the following types of directory number:

Extension number:

- CN number
- Common abbreviated number
- Extension number
- Extension - (PBX) group number
- Fictive number
- OPERATOR number
- Paging number
- Voice answer number

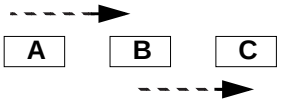
It is possible to distinguish between different cases for diversion on no reply dependent on whether it is an incoming external or internal call.
Example:
Call diversion on no reply at a defined extension should only take place for incoming external calls. The internal callers may activate call-back on free extension, when the called extension does not answer. An incoming call from a tie line will also handled as an external call.
An incoming CN call will be handled as it is programmed via the command 2084 (see also chapter PROGRAMMING in this document).

For more information regarding Corporate Networking, see NETWORKING,
document 365/155 34-ASB 150 02 Uen.

Simple diversion

Normally, a call is not allowed to be diverted more than once.

A is diverted to B



B is diverted to C

A call to A is diverted to B after the predetermined ring time has expired.
Ringing continues at B irrespective of whether B is diverted or not.
If B has ongoing follow-me to C, the call will proceed onwards to C.

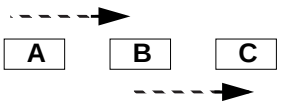
Repeated diversion

By opening the function "repeated diversion" one can arrange for a call to ring at an optional number of extensions in any order.

The selected extensions are programmed for diversion on no reply to the next extension in the chain.

The time for ringing at the respective extension is determined by the individual programmable time.

A is diverted to B



B is diverted to C

A call to A is diverted to B on timeout.
On timeout at B the call is diverted onwards to C.

External diversion

As an external abbreviated number can be assigned as divertee position a call can be connected to an optional public network subscriber.

NOTE: If no party can supply the clearing signal, the call will be cleared down automatically after approximately 2.5 minutes.

An incoming CN call will be handled as it is programmed via the command 2084 (see also chapter PROGRAMMING in this document).

For more information regarding Corporate Networking, see NETWORKING,
document 365/155 34-ASB 150 02 Uen.

Operation

The call is presented acoustically and visually at the originally called party until the time for diversion is reached.

The call is then presented to the divertee position and the call to the original party ceases.

Indication at divertee position

If the divertee position has a telephone with display the top row will show the party from whom the call was diverted and the second row will show the calling party.

EXECUTIVE Telephone

```
JOHNSON ANDREW          12002007
SMITH JOHN              12002005  CALLING
directory                redial       prog
```

STANDARD Telephone

```
JOHNSON A 12002007
SMITH J   12002005 C
```

Indication at caller

The caller has called number 2005 "JOHNSON" and before timeout receives the following display information:

EXECUTIVE Telephone

```
10 Jul 14:40   +15°
JOHNSON ANDREW          12002005  FREE
                        save
```

STANDARD Telephone

```
10 Jul 14:40   +15°
JOHNSON A 12002005 F
```

On time out the call is diverted to number 2007 "SMITH".

The originally called party is now shown on the top row, and the party being rung on the second row.

EXECUTIVE Telephone

```
JOHNSON ANDREW          12002005
SMITH JOHN              12002007 FREE
                        save
```

STANDARD Telephone

```
JOHNSON A 12002005
SMITH J   12002007 F
```

Capacity

A divertee position can be programmed for each extension. This divertee position is common with those positions that have been programmed for other diversion functions.

Limitations

If the call has already been diverted once or subjected once to follow-me there normally will be no diversion.

If the divertee position is busy when time out occurs, supervision of the party called originally will continue.

On initiation of call me, voice or text messages these functions will supervise the party called originally.

When extensions are programmed for repeated diversion the following rules apply:

- Internal calls:
  Unlimited number of diversions
- External calls:
  A maximum of seven diversions.
  After seven diversions the call will be directed to the alternative answering position for the trunk.

Follow me/Diversion to an ACD group

Follow me/Diversion to an ACD group is not applicable for "Diversion on no reply".

See following documents for closer information concerning the specific topic:

ACD group general
Doc.no.: 105/155 34-ASB 150 02 Uen.

Diversion Direct
Doc.no.: 165/155 34-ASB 150 02 Uen.

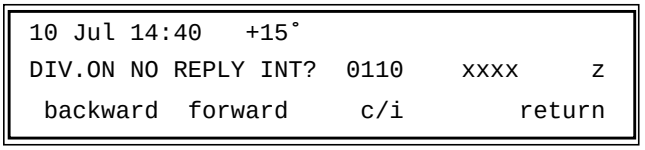
Diversion on Busy
Doc.no.: 166/155 34-ASB 150 02 Uen.

Follow me
Doc.no.: 202/155 34-ASB 150 02 Uen.

Programming

First it must be programmed, what kind of incoming calls should be diverted (incoming external or internal calls). Step to command 0110 or / and 0157.

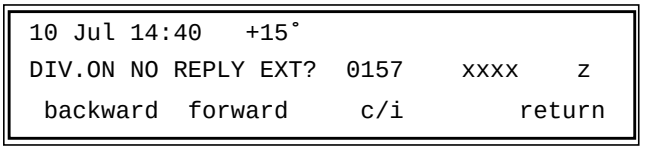
0110
Program diversion on no reply for internal calls.



xxxx	Enter extension's directory number
z	Enter function: Y = Yes. N = No

Step to command 0157.

0157
Program diversion on no reply for incoming external calls.



xxxx	Enter extension's directory number
z	Enter function: Y = Yes. N = No

Step to command 0112.

0112
State divertee position

A divertee position can be programmed for each extension.

NOTE: This divertee position is common for all diversion applications.

```
10 Jul 14:40   +15°
DIVERSION ADDRESS        0112    xxxx    >
 backward  forward     c/i        return
```

xxxx Enter extension's directory number
Press ENTER

```
10 Jul 14:40   +15°
                  zzzzzzzz    0112  xxxx
 backward  forward     c/i      return
```

zzzzzzzz Enter answering position's directory number

0176
Call diversion to a CN number allowed ?

This command defines if an extension is allowed to activate call diversion to a private network number.

```
10 Jul 14:40   +15°
DIVERSION TO CN?     0176     xxxx     z
 backward  forward       c/i      return
```

xxxx Enter extension's directory number

z Enter relevant function:
Y = Yes
N = No (default value)

2084
Type of network call handling

The command defines whether network call shall be handled as internal or external (tie line) calls with corresponding categories.

Example: Rerouting categories (on busy) for actual incoming trunk shall be deactivated (internal call handling) to enable proper 'call back on busy handling' from network side.

Individual programming

Using a system telephone the user can her-/himself program the divertee address.

See document FACILITY DESCRIPTION (155 34-ASB 150 02 Uen).

Diversion times

Default data is 14 seconds the first time and 8 seconds for repeated diversion, provided the extension user has not used the telephone in the interim.
The times for diversion can be altered individually per extension.

0119
Time 1

Is the time that a call rings at the called number before diversion takes place.
Time 1 is activated only for the first diversion after the telephone has been used. All subsequent diversions follows time 2.

```
10 Jul 14:40   +15°
DIVERSION TIME LONG   0119 xxxx      zzz
 backward  forward      c/i       return
```

xxxx Enter extension's directory number

zzz Enter relevant time (0 - 255 seconds)
Default value = 14 sec

0120
Time 2

Is the time that a call is signalled to the called number before diversion is activated.

Time 2 is the time before diversion is activated for all subsequent calls unless the telephone is utilised in the interim.

```
10 Jul  14:40  +15°
DIV. TIME SHORT       0120 xxxx      zzz
 backward  forward      c/i       return
```

xxxx	Enter extension's directory number
zzz	Enter relevant time (0 - 255 seconds) Default value = 8 sec

0123
Repeated diversion

This command is used to cancel the blocking of repeated diversion for the extension in question

```
10 Jul 14:40   +15°
REPEATED DIVERSION    0123 xxxx        z
 backward   forward      c/i      return
```

xxxx	Enter extension's directory number
z	Enter relevant function: Y = repeated diversion. N = simple diversion (default data)

Equipment

None.

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
SEA/EBBMP Pfleger H.	SEA/EBBX/E	168/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved	Kontr/Checked	Datum/Date / Rev	Tillhör/Referens-File/Reference
SEA/EBBMP		99-07-15 / B	ASB 150 02
		Database reference	
		168.fm	

DOORPHONE

Definition

A doorphone is a unit that is located at the entrance, and which is used to call one or more ASB 150 02 extensions.

Use

The doorphone is used to monitor the admission to a company.

The doorphone function provides also the feature to open the door lock from an extension.

Calls from the door speaker can be directed to:

- an individual extension (if programmed as hot-line position of the door-speaker).
- a group of extensions (if programmed as extensions having the possibility to answer the door-phone calls).

Operation

Operation depends on the type of the doorphone you are using. The description below refers to the ERICSSON Door Interface Unit.

Call from door speaker

Depending on the type of the connected door-speaker, a call is initiated by pressing the doorphone button.

The extension(s) programmed as having the right to answer the door speaker calls, receive(s) a call signal.

Answering door-speaker calls

The call can be answered from an extension by lifting the handset and speech connection will be established.

Opening/closure of the entrance lock

The door opener is activated by making an inquiry to its directory number. This extension number can also be programmed on a programmable key.

After making the inquiry the extension that answered the door-speaker call and made the inquiry to the door-opener will be automatically disconnected from door-opener and door-speaker.

At the OPERATOR console the directory number of the door-opener can be entered on a name selection key. The OPERATOR console can activate the door-opener by transferring the incoming doorphone call to the directory number of the door-opener and the OPERATOR itself will be free again.

The door-opener will be deactivated after the timeout interval (possible intervals are 1; 4; 6 or 8 seconds, adjustable in Door Interface Unit).

Deactivation of the doorphone

Deactivation of the doorphone occurs:

- when the extension which answered the call goes on hook,
- after an activation of the door-opener,
- after time-out (for security reasons, about 1; 2; or 3 minutes).

Capacity

The number of doorphones is limited only by the number of available analogue extension positions.

Limitations

The connection of an ERICSSON's Door Interface Unit to the ELU-A occupies 2 analog extension positions.

Programming

0116
Hot-line

If the door-speaker has no key pad, it is necessary to state, via this command, which directory number the calls have to be directed to.

```
10 Jul 14:40   +15°
HOT LINE              0116 xxxx     zzzz
backward  forward     c/i      return
```

xxxx Enter door speaker's directory number

zzzz Enter answering party's directory number.

The answering directory number can be:

- a physical extension of the system, whose number has to be stated in this command. In this case just this extension can answer all the door-speaker calls,
- a fictive extension supervised by some other extensions, which thus is authorized to answer the door-speaker calls,
- a common bell extension,
- hunting group

0161
Music channel in hold state

This command allows you to specify whether a system's extension will be connected to the silent channel or to the music channel while being in park status. The door-speaker, as an extension, will be in park status during the opening of the entrance lock. Therefore, door-speaker extension must be connected to silent channel while being in park status.

EXECUTIVE telephone

```
10 Jul 14:40   +15°
MUSIC IN HOLD STATE?     0161    xxxx     z
backward      forward      c/i       return
```

xxxx enter door-speaker's directory number

z defines whether or not the specified extension will be connected to Music on hold, while being in park status.

Y (yes) = Connected to Music on hold channel (default value)

N (no) = Connected to silence channel

0144
Hot line delay time

(See HOT LINE facility description, document 240/155 34-ASB 150 02 Uen).

0122
Long ring bursts?

This command is used to state for the analog extensions whether or not ringing to a connected unit shall always utilise long bursts.

For this feature this command must be set to YES.

```
10 Jul 14:40   +15°
LONG RING BURSTS?     0122   xxxx   zz
backward  forward     c/i      return
```

xxxx Enter the directory number of the door-speaker **(the same must be done for the door-opener)**.

zz Enter the relevant function:

YES= Ring signal with long ring bursts, e.g single ring signal, irrespectively of the type of the call.

NO = Ring signal dependent on type of the call (default value).

0143
Line break time

This command is used to define the line break interval for the door-speaker extension that is an analog extension. When the call from the door-speaker has been answered and the answering extension goes on-hook without opening the door, deactivation of the door-speaker occurs after a user-definable time.

The recommended value is 2,5 seconds.

USING OTHER DOORPHONES DIFFERENT FROM ERICSSON DOOR INTERFACE UNIT

0121
DTMF to instrument?

This command helps to program door-speaker's extension position and must be settled in cases when another type of doorphone has been used (different from the above mentioned ERICSSON's Door Interface Unit). Specific for these doorphones is that the digits sent by answering extension and used to order the opening of the door will be sent to the connected doorphone unit as DTMF tones.

```
10 Jul 14:40   +15°
DTMF TO INSTRUMENT    0121 xxxx        z
backward  forward     c/i      return
```

xxxx	Enter answering extension's directory number
z	Enter Y = YES Enter N = NO (default value)

Equipment

A big varity of doorphones that fulfil a list of requests (see Technical Data in the 1555-ASB15002. Uen System Overwiev) can be connected to ASB150 02.

ERICSSON's Offer

The ERICSSON's Door Interface Unit must be connected to an ELU-A and occupies two analogue positions. In addition you need a doorphone (as specified in Installation Instructions).

Other Offers

Any other **suitable** doorphone version can be used, but verify that the command 0121 has been settled properly.

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
SEA/EBBMP M.Plattner	SEA/EBBX/E	169/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved	Kontr/Checked	Datum/Date / Rev	Tillhör/Referens-File/Reference
SEA/EBBMP		99-07-15 / C	ASB 150 02
		Database reference	
		169.fm	

DTMF TONES

Definition/Use

During speech connection the user can send and receive DTMF (=Dual Tone Multi Frequency) tones from/on the telephone.

Operation

During speech connection the user can send and receive DTMF tones from/to the telephone, independent if it is an incoming or outgoing, internal or external call.

This is very useful when using DISA, Automated Attendant, call back services or retrieving messages from an external mailbox.

Capacity/Limitations

It is possible to send and receive DTMF-tones from/to any kinds of System Telephone and Analogue DTMF Telephone.

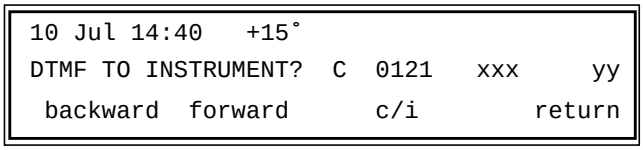
No TCD check is performed for the dialled DTMF digits.

Programming

0121
DTMF to instrument?

Peripheral (external) units can be connected to an extension position and be controlled by DTMF-tones e.g. entry phone.

This command is used to determine whether digits dialled by the call partner can be transmitted as DTMF-tones to the connected unit.



xxxx	Enter extension's directory number
z	Enter the respective function: Y = Yes N = No (default data)

The times determined by means of commands 2009 and 2010 are used both for external traffic and for transmission to the extension equipment.

These commands are only accessible via RASC:

1313
DTMF signal scheme

The command is used to state the signalling table for DTMF register signalling.

Default value: 00 = Standard DTMF

Values = 01 - 99 (for future use)

2009
Tone time per digit for DTMF-signalling

Determines the tone time per digit in milliseconds.

Value = 0 - 255

NOTE: Tone time = 0 gives continuous tone transmission (of first keyed digit). Intended for use when measuring the DTMF-signal.

2010
Interdigital pause for DTMF-signalling

Determines the interdigital pause for DTMF-signalling.

Value = 20-255

2026
Attenuation for DTMF-signals

The attenuation level of DTMF-reception can vary from market to market. The ELU-A/MFU board has therefore been designed with programmable attenuation level.

Value	Attenuation level
0	high (default value)
1	low
2-225	not used

261x
DTMF-tones

The following commands are used for the programming of DTMF-tones:

- 2610 Number of DTMF
- 2611 Level (dBm0)
- 2612 Level difference (dBm0)
- 2613 Signal time (ms)
- 2614 Pause time (ms)

2610
Number of DTMF

This command determines the number of DTMFs to be 12 or 16. If the number of DTMFs is 16, the maximum number of tone fragments is 15. If the number of DTMFs is 12, 19 tone fragments are possible (see command 2601).

2611
Level (dBm0)

This command defines the level of the high frequency group for DTMF.
Value: -64.0 - +3.0 dBm0 in steps of 0.5 dBm0

2612
Level difference (dBm0)

This command determines the difference in level (dBm0) between high and low frequency groups in DTMF-sending.
Value: 1 - 3 dBm0 in steps of 0.5 dBm0

2613
Signal time (ms)

This command defines the tone time per digit for digit sending with DTMF.
Value: 0 - 32768

N.B.: Tone time = 32768 means continuous tone sending (of first entered digit). Intended for use when measuring the DTMF-signal.

2614
Pause time (ms)

This command defines the interruption time between the digits at digit sending with DTMF.
Value: 0 - 32768

N.B.: Pause time = 32768 means silence.

Equipment

None.

EXTERNAL LINE KEY

Definition

External line key is one of the traffic functions that can be assigned to the programmable keys on any digital Telephone.

An optional trunk can be represented on each key.

The help of an external line key gives the extension user a feeling of having direct access to the trunk.

This function is especially useful when the system is entirely or partly to be used as a key system or as a private trunk line.

Operation

Incoming calls

A call is signalled by the trunk's lamp which starts to flash rapidly.

If the extension is free, the acoustic ring signal that has been programmed for the key will be received.

If the extension is busy with another call, a short, muted ring burst will be supplied. (Not applicable if the key has been programmed not to ring).

A call via an external line key is not shown on the display.

Answer

The call is answered by the user as follows:

- Press external line key whereupon lamp shows connecting control-flashing.
  Ring signal ceases and extension obtains speech connection with caller.

If the telephone has a display, this will show for example:

EXECUTIVE Telephone

```
10 Jul 14:40   +15°
EXTERNAL                  705  SPEECH
```

STANDARD Telephone

```
10 Jul 14:40   +15°
EXTERNAL     203  S
```

Is the system connected to an ISDN trunkline, you will also get the national significant number of the external calling party presented on the display
(further information see ISDN - Supplementary service CLIP in doc. 268 / 155 34 - ASB 150 02 Uen)

Outgoing calls

A call is initiated as follows:

- Press key in idle state, that is, when lamp is extinguished.
  Lamp shows connection control.
  Caller hears external dial tone and can then dial relevant external number

Analogue trunk line

The display shows the dialled digits:

EXECUTIVE Telephone

```
10 Jul 14:40   +15°
                     1234567123
                     save
```

STANDARD Telephone

```
10 Jul 14:40   +15°
      1234567123
```

ISDN trunk line

The display shows the dialled external number and also the call status message in the same way as it is used for internal calls.

The following call status messages will be indicated:

- Free
- Busy
- Speech
- Unknown
- Incomplete
- Congestion

EXECUTIVE Telephone

```
10 Jul 14:40   +15°
                    1234567123    FREE
                    save
```

STANDARD Telephone

```
10 Jul 14:40   +15°
      1234567123    F
```

If the outgoing call is answered by another number than the dialled one, the national significant number (public destination code + public subscriber number) of the party actually connected will be presented on the display.
(further information see ISDN - Supplementary service COLP in doc. 268 / 155 34 - ASB 150 02 Uen)

Call metering

When the system receives charging information at outgoing calls from the public net, the STANDARD and EXECUTIVE telephones can activate cost indication and the elapsed charging data will be presented on the display.

EXECUTIVE Telephone

```
10 Jul 14:40   +15°            56.80 ATS
                      1234567123    SPEECH
                         save      cost-off
```

STANDARD Telephone

```
                  42.60 ATS
       1234567123    S
```

For further information about Call Metering refer to CALL METERING,
document 141/155 34-ASB 150 02 Uen.

Parking

- Press external line key.
  Its lamp flashes slowly.
  Connected trunk will be parked automatically when another traffic function is selected.
  While trunk is parked, display shows PARKED CALL, unless another traffic function key is pressed.

Reconnection of parked call

A parked call can be reconnected at any time:

- Press external line key again.
  When a parked analogue trunk is reconnected, display always shows same information (trunk name and trunk number) irrespective of whether call is outgoing or incoming
  When a parked ISDN - trunk line is reconnected, the display will always show the number of the connected party.

EXECUTIVE Telephone

```
10 Jul  14:40  +15°
EXTERNAL                    705 SPEECH
```

STANDARD Telephone

```
10 Jul 14:40   +15°
EXTERNAL     705  S
```

See also under PARKING - INDIVIDUAL, document 402 / 155 34-ASB 150 02 Uen and "PARKING - COMMON ACCESS", document 401 / 155 34-ASB 150 02 Uen.

Trunk line occupied by another extension user

As a trunk can have multiple representation, e.g. it can be represented on several different extension (system) telephones, the lamps of trunks that are occupied (being used) by other extensions will glow steadily.

It is not possible to connect a trunk in this state. Depression of the external line key results in busy tone and the display shows "BUSY or B".

Capacity

The maximum number of external line keys is only restricted by the number of programmable keys:

- BASIC DBC 210 = 3
- ECONOMYplus DBC 211 = 4
- STANDARD DBC 212 = 4
- EXECUTIVE DBC 213 =14
- OPERATOR DBC 214 = 3
- KEY PANEL =17

Old telephones:

- BASIC DBC 199 = 0
- ECONOMY DBC 601 = 0
- ECONOMY DBC 751 = 0
- STANDARD DBC 631 =10
- STANDARD DBC 755 =10
- EXECUTIVE DBC 662 =30
- EXECUTIVE DBC 753 =30
- OPERATOR DBC 663 =20
- OPERATOR DBC 754 =20

Limitations

- A call established via an external line key and which is transferred will when the extension telephone receiving the transferred call be presented on
  Line 1 or **Line 2**.
  Consequently, one of these traffic functions must be free.
- External line key is not affected by activated diversion or follow me.

Programming

0301
Program an external line key

A key must be programmed for each trunk that is to be represented on the telephone.

```
10 Jul 14:40   +15°
FUNCTION OF KEY       0301 xxxx yy    zz
 backward  forward     c/i      return
```

xxxx	Enter extension's directory number
yy	Enter relevant key (00 - 48)
zz	Enter function = 12

Step to command 0302

0302
State directory number

The selected key shall be programmed for the trunk that has been selected.

```
10 Jul 14:40   +15°
ASSOCIATED NUMBER     0302 xxxx yy  zzzz
 backward  forward     c/i      return
```

zzzz — Enter trunk's directory number

Step to command 0303.

0303
State ring type

```
10 Jul 14:40   +15°
RINGING ALTERNATIVE   0303 xxxx yy     z
 backward  forward     c/i      return
```

z — Entered relevant ringing method for trunk (0 - 5)

See also under "RING AND TONE SIGNALS", document 443 / 155 34-ASB 150 02 Uen.

1101
Erase existing answering position

If the trunk shall only be represented on an external line key, the existing answering position is to be erased.

```
10 Jul 14:40   +15°
ANSWERING POS DAY     1101 xxxx     zzzz
 backward  forward     c/i      return
```

xxxx — Enter trunk's directory number

zzzz — Press **-** -key to erase existing answering position.

Repeat the above for commands 1102 - 1104 if so required.

3065
Parking for common access

If it shall be possible to park the trunk for common access, the extension shall be assigned a facility category that has the following command set at YES

```
10 Jul 14:40   +15°
COMMON HOLD ?         3065   xx        z
 backward  forward     c/i      return
```

xx — Enter facility category group 0 - 15

z — Enter "Y" = parking permitted.
Default data = Y

0101
Facility category (COS) for extension

Insert the extension in the selected facility category group.

```
10 Jul 14:40   +15°
FACILITY COS          0101 xxxx       zz
 backward  forward     c/i      return
```

xxxx — Enter extension's directory number

zz — Enter facility category (COS) group 0 - 15

Individual programming

Extensions with digital telephones can program function keys for trunks.

See document FACILITY DESCRIPTION - GENERAL (155 34-ASB 150 02 Uen).

Equipment

None.

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
SEA/TB/MP T.Preißner	SEA/TB/X	200/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved / Kontr/Checked		Datum/Date / Rev	Tillhör/Referens-File/Reference
SEA/TB/MP		98-01-26 / A	ASB 150 02
		Database reference	
		200.fm	

FAULT INDICATION

Definition

Fault indication enables the signalling of a fault as selected in the RASC tables, on a digital system telephone set with display.

Use

This function can be used when certain alarms detected by the system should be signalled on a digital system telephone set.

Operation

STANDARD-, EXECUTIVE Telephone and OPERATOR Console.

There are a number of alarms that are detected by the system which can be indicated on a digital telephone set (e.g. LED lights on function key).

When the programmed function key indicates an alarm, press the key and the following is displayed on an:

EXECTUTIVE telephone

```
12  Feb 15:55   +22°
ALARM (01) 1206 - 1415
CODE:C4-0510 FA-0105
```

STANDARD telephone

```
ALARM(01)1206-1415
CODE:C4-0510 FA-0105
```

Press "Enter" to clear this display and step to the next masked alarms.

Capacity

This feature can be activated on all digital system telephone sets with programmable function keys.

Limitations

Not available on analog telephones and on digital telephone sets without programmable function keys.

Programming

ACCESSIBLE VIA RASC

To flag the warnings that are to be indicated, enter under *Maintenance* / *logging* and select from *defined codes* for example:

```
C1 | -------- SWITCH CHANNEL RELEASE ERROR
C4 | -A------ DIGITAL LINK REPORT
C7 | -W------ CALL METERING COUNTER OVERFLOW
```

enter an "A" to activate fault indication

0302

Insert the code ***91#** on selected key to display all flagged alarms.

Equipment

none

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
SEA/TB/MP M.Plattner	SEA/TB/XE	203/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved	Kontr/Checked	Datum/Date / Rev	Tillhör/Referens-File/Reference
SEA/TB/MP		97-10-31 / A	ASB 150 02
		Database reference	
		203.fm	

FAX EXTENSION

Definition

A fax that is connected to ASB150 02 via an analogue extension can be specfied as fax extension.

Use

A connected fax can be specified quite easily:
All relevant commands for analogue extensions are valid, but the execution of the features in the following table are restricted.

Operation

Once an analogue extension interface is defined as fax extension, the following settings are restricted:

	feature name	value
	extension facilities	
1	conference	not allowed to be a member in a conf.
2	call back	not allowed to initiate call back to a fax extension
3	break-in	not allowed to initiate break-in on a fax extension
4	camp-on	initiation of camp-on without camp-on tone *
5	diversion direct (internal & external)	not allowed to a fax extension **
6	diversion on no reply (internal & external)	not allowed to a fax extension **
7	diversion on busy (internal & external)	not allowed to a fax extension **
8	follow me	not allowed to a fax extension **

* It is only possible to make a camp on to a fax extension via an extension only through a DID or transfered call, a diverted call cannot be camped on.

** Call forwarding is allowed, if the call comes from another fax extension.

	trunk facilities	
1	reroute position at day	not valid for fax extensions *
2	reroute position at night	not valid for fax extensions *
3	common voice announcement at day	not valid for fax extensions **
4	common voice announcement at night	not valid for fax extensions **
5	busy voice announcement at day	not valid for fax extensions **
6	busy voice announcement at night	not valid for fax extensions **

* Only valid, if reroute position is also a fax extension

** We recommend not to program this voice announcement. However, if it is programed, the voice announcement will be played.

Capacity / Limitations

Each analogue extension can be configured as fax extension.

Programming an individual as fax extension overrides the command "1032 Trunk impedance adaption". This command is normally used to state whether or not the automatic trunk impedance adaption (ATIA) has to be used.

Programming

This command can only be accessed via RASC:

0162
Terminal type

This command is used to define the terminal type connected to the analogue extension interface.

Valid values:	0	Default, speech
	1	General, 3.1kHz audio
	2	Group 3 fax, 3.1kHz audio
	3	Modem, 3.1kHz audio
Default value:	0	Default, speech

The terminal is autom. defined as fax extension, if you select option: 2 Group 3 fax, 3.1kHz audio

Equipment

A FECU must be connected to the CPU-D4.

FICTIVE NUMBER

Definition

A fictive number is a directory number that is not connected to a hardware position.

There are also some programmable general fictive numbers that can be utilised as answering positions.

Use

Fictive numbers are used when it is desired to direct calls to a directory number that is not connected to a hardware position.

Example of use:

For the common call pick-up function the calls are directed to and queued at the fictive number.

Members of the group have assigned the supervision function for the fictive number and can pick up calls from it.

It is possible to set direct diversion onto a fictive number - see also "DIVERSION DIRECT, document 165/155 34-ASB 150 02 Uen.

Operation

See also "CALL PICK-UP - COMMON", document 142/155 34-ASB 150 02 Uen.

Capacity

It is possible to define 1000 fictive numbers, which can be splitted up into a 16 number series as a maximum.

Limitations

- It is not possible to make a call to a fictive number via a programmed supervision key.
- Name strings within the telephone directory cannot be provided for all fictive numbers, because of the limited storage capacity of the internal directory book - see also "TELEPHONE DIRECTORY, document 481/155 34-ASB 150 02 Uen.
- Following directory numbers will not be supported as diversion address:
  - S-bus terminals, because they are dedicated as trunk individuals.
  - Individual mailbox.

Programming

The fictive number must have been programmed and assigned a directory number.

5409
Create fictive number series

It is possible to define "fictive directory numbers" in ASB 150 02. The fictive directory number facility means that all calls to the number are queued. If there is a call queue, this is indicated on all telephones that have a programmable key for monitoring the fictive number. Any extension can answer the oldest call by pressing the supervision key, but is not possible to make a call to the fictive number by mistake.

Up to 16 number series can be defined for fictive number handling. A fictive number series will be represented by one directory number, where the last one, two or three digits are replaced by a wildcard character:

8000: 1fictive number	
800?: 10fictive numbers	from 8000-8009
80??: 100fictive numbers	from 8000-8099
8???: 1000fictive numbers	from 8000-8999

Each fictive number can have a maximum of 4 digits.

5509
Delete fictive number series

With this command a fictive directory number can be deleted.

5612
Alter fictive number series

With this command it is possible to change the directory number of a fictive directory number.

If you want to change the number to a new number that is in conflict with the old number, this cannot be done directly. In such cases first change to a random free number and then change to the desired number.

The fictive number can be given a name string that is displayed for calls to and on pick-up of calls. For programming of name strings see also under "TELEPHONE DIRECTORY", document 481/155 34-ASB 150 02 Uen.

5810
Show fictive number

This command displays a survey of all defined fictive numbers.

2530
Diversion address for fictive numbers

With this command the single fictive numbers are created. Programming the diversion address means activation of direct diversion.

2830
Fictive numbers open for tenant

This command gives the possibility to allow access by the 16 tenant groups.

6501
Directory names

The command handles the assignement and visibility of names within the internal directory book. The visibility of names states whether the name can be scrolled within the internal directory book or not. The visibility has no influence onto the traffic information.

Equipment

The following features for the fictive number facility are affected by the FECU:

- usage of more than 16 fictive numbers; without FECU the rest of the fictive numbers are handled as blocked directory numbers and any access to such a number shall result in a FECU warning; programming of fictive numbers shall
- direct diversion from fictive numbers; without FECU no diversion is executed and a FECU warning is generated,
- CTI monitoring

For detailed description see Facility Description - General, document 155 34-ASB 150 02 Uen.

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
SEA/EBBMP Nussbaumer	SEA/EBBAE	202/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved	Kontr/Checked	Datum/Date	Rev / Tillhör/Referens-File/Reference
SEA/EBBMP		98-11-03	D

FOLLOW ME

Definition

Follow me means that calls to an extension's own number can be diverted to another extension or to the OPERATOR.

Use

Follow me allows an extension user to "take the telephone" to wherever he/she goes on the company premises.
Follow me can also be effected to an optional number in the public telephone network by utilisation of a common abbreviated number.

It is possible to set up follow me to:

- Automated Attendant
- CN number
- Common abbreviated number
- Common mailbox
- Extension number
- Fictive number
- Group - (PBX) hunting number
- Paging number
- OPERATOR number
- Voice answer number
- ACD group (see command 2057)

If an extension user sets up follow me to the own directory number, it is possible to utilise follow me to move the telephone from any answering position.

It is possible to bypass follow me:
See BYPASS CALL DIVERSION AND FOLLOW ME, document 121/155 34-ASB 150 02 Uen.

Display call forwarding status on idle instrument

If the telephone is in idle state, the user will be informed by the display whether or not follow me is activated.

Operation

To order/cancel from all types of telephone

NOTE: On ECONOMYplus -, STANDARD - and EXECUTIVE Telephones, the user doesn't need to lift the handset or press the **On/Off**-key.

To order from own telephone

- Lift handset or press **On/Off**-key and, when dial tone is heard, key following command:
  *** 21 *** New directory number #
- Special dial tone is heard as verification.

To order from answering position or another telephone

- Lift handset or press **On/Off**-key and, when dial tone is heard, key following command:
  *** 21*** Own directory number ***** New directory number #
- Normal dial tone is heard as verification.

To cancel from own telephone

- Lift handset or press **On/Off**-key and, when dial tone is heard, key following command:
  # 21 #
- Normal dial tone is heard as verification.

To cancel from answering position or another telephone

- Lift handset or press **On/Off**-key and, when dial tone is heard, key following command:
  # 21 * Own directory number #
- Normal dial tone is heard as verification.

To order/cancel from system telephones

To order from own telephone

- Lift handset or press **On/Off**-key and, when dial tone is heard, key following key sequence: **Diversion**-key and New directory number and **Diversion**-key.
- **Diversion**-lamp lights as verification and ordering party hears special dial tone.

Display call forwarding status on idle instrument

In idle state the display shows that "Follow me" is activated and to which directory numbers incoming calls are diverted.

EXECUTIVE Telephone

```
10 Jul 14:40   +15°
FOLLOW ME          4711->81004712
 directory               redial       prog
```

STANDARD Telephone

```
10 Jul 14:40   +15°
FOLLOW ME ->81004712
```

To cancel from own telephone

- From idle state press **Diversion**-key
- **Diversion**-lamp extinguishes as verification

Capacity

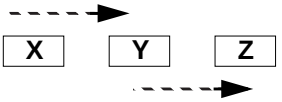
All extensions can program follow me. Only one follow me position per extension can be programmed.

Limitations

Rules for follow me/repeated interception.

A call that has been diverted by the follow me procedure will not be diverted again using follow me if the answering position sets up a new follow me position.

X has ongoing follow me to Y

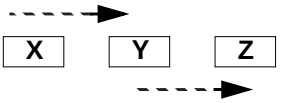


Y has ongoing follow me to Z

A call to X is presented at Y.

However a diverted call will be redirected by means of follow me when the divertee position is moved by means of the follow me procedure.

X is diverted to Y



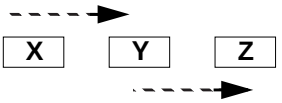
Y has ongoing follow me to Z.

A call to X is presented at Z.

Call from the answering position

If the party serving as answering position (Z) calls the person who effected follow me (Y), the call will not be diverted via follow me. Instead Y's telephone will be rung.

X has ongoing follow me to Y



Y has ongoing follow me to Z

A call from X to Y is presented at Z.

A call from Z to Y is presented at Y.

Unaffected traffic functions

Only calls that are directed to the extension's directory number are affected by follow me.

Calls that are presented on the following traffic functions are not diverted by using the follow me procedure:

- External line keys
- Supervision keys
- Intercom keys

Restrictions on follow me

Follow me is not possible to:

- Trunks
- Routes

Follow me cannot be ordered from analogue rotary dial telephones.

NOTE: Follow me of an external call to an external abbreviated number will be disconnected automatically after approximately 2.5 minutes if the caller is a trunk without disconnection signal.

Restrictions on display of call forwarding status on idle instrument

If in addition to Follow me an absence info is programmed, the absence info will be shown on the display instead of the Follow me addess.

Programming

An order for follow me is initiated directly from the respective telephone.

See chapter OPERATION above.

0113
Programm follow-me address

```
10 Jul 14:40   +15°
FOLLOW ME ADDRESS        0113      xxxx   >
 backward  forward     c/i       return
```

xxxx Enter extension's directory number
Press ENTER

```
10 Jul 14:40   +15°
                zzzzzzzzz   0113     xxxx
 backward  forward     c/i       return
```

zzzzzzzz Enter directory number of follow me position

2084
Type of network call handling

The command defines whether network call shall be handled as internal or external (tie line) calls with corresponding categories.

Example: Rerouting categories (on busy) for actual incoming trunk shall be deactivated (internal call handling) to enable proper 'call back on busy handling' from network side.

2057
Follow me/Diversion to ACD group number

The command defines whether follow me, direct diversion respective diversion on busy to an active ACD group is allowed - on default the command is deactivated, that means follow me, direct diversion respective diversion on busy is not allowed.

See following documents for closer information concerning the specific topic:

Diversion Direct
Doc.no.: 165/155 34-ASB 150 02 Uen.

Diversion on Busy
Doc.no.: 166/155 34-ASB 150 02 Uen.

Diversion on No Reply
Doc.no.: 167/155 34-ASB 150 02 Uen.

ACD group general
Doc.no.: 105/155 34-ASB 150 02 Uen.

Equipment

None.

GROUP (PBX)-HUNTING

Definition

Directory numbers can be assigned to a group with a common call number.

Calls to the group are directed to one/more free and not diverted directory number(s) in the group, according to a defined hunting order.

Use

Group hunting is employed when a group of persons with common work duties answer incoming telephone traffic. The hunting of a free group member can either be done according to a serial or parallel distribution.

Serial distribution

Serial distribution means, that an incoming call to the common call number is presented to one of the free assigned group members.

The following directory numbers are allowed to be members within a group with serial distribution:

- Extension number
- Operator console
- Fictive number
- Voice answer number

The serial distribution is available in two modes :

- Sequential distribution:
  The selection starts always at the first member of the group.
- Cyclic distribution:
  The selection starts after the member, which was connected during the previous call.

Parallel distribution

Parallel distribution means, that an incoming call to the common call number is presented to all assigned group members.
Only extension numbers are allowed to be members of a group with parallel distribution.

Operation

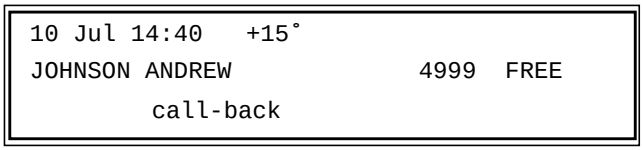
Serial distribution

The basic idea of this facility is to distribute an incoming call to a free group member, according to the sequential or cyclic distribution mode. The selected member will be skipped if it has activated call diversion or if it is busy with an other group call.
However a group call can be presented on **Line 2** if **Line 1** is busy with a non-group hunting call. (prerequisite: Line 2 must be enabled to receive a second incoming call).

Incoming call to the hunting group

If an internal call is set up to a hunting group with serial distribution, the display of the calling party shows the dialled group number until the system selects a free group member, then the directory number of the free group member is shown:

EXECUTIVE Telephone



At incoming network calls via VPN and or leased lines using QSIG to a hunting group with serial distribution, the name and number of the group member is returned in the alert and connect message to the network.

For public ISDN calls, the number of the group is sent as connected party number to the public net. The number of the answering group member will not be available for the called external party.

All group members are busy

If all group members are busy, an internal caller will receive busy tone, however he/she has the possibility to initiate camp-on on the busy group. The first group member, which allows camp-on (only extension) according to the distribution mode, will receive one muted ring signal and the caller receives ring tone or music on hold until the selected group member becomes free again.

Since a call to an operator, fictive number or voice answer number can not receive busy tone, the search will always succeed to such a member. Only in case of congestion, the next member will be examined.

External incoming calls to a busy group hunting group will be routed to the trunk reroute position.

All group members are blocked, diverted or no members are configured

If all members of the group are blocked, diverted or no members are configured, an internal caller to the PBX group will be disconnected and an external caller will be routed to the reroute position of the incoming trunk.

Parallel distribution

The basic idea of this facility is to broadcast an incoming call to all free group members. All group members which are busy or have activated call diversion will be excluded from the broadcast. During the broadcast only one PCM channel will be occupied in the system.

Incoming call to a PBX group

If an internal call is set up to a group hunting group with parallel distribution, the display of the calling party shows the dialled group number until one of the group members answers the call.

Calling:

EXECUTIVE Telephone

```
10 Jul 14:40   +15°
PBX GROUP 1          5000        FREE
```

Answering:

EXECUTIVE Telephone

```
PBX GROUP 1          5000
JOHNSON ANDREW       201         SPEECH
```

On the group members‘ telephone display the group number and the calling party will be shown

EXECUTIVE Telephone

```
PBX GROUP 1          5000
SMITH BILL           300         CALLING
```

At incoming network calls via VPN and or leased lines using QSIG to a hunting group with parallel distribution, the name and number of the group is returned in the alert and connect message to the net.

For public ISDN calls, the number of the group is sent as connected party number to the public net. The number of the answering group member will not be available for the calling external party.

Several incoming calls nearly at the same time

A hunting group can present only one incoming call to its member during parallel distribution. The next incoming call can not be presented before the first call will be answered. All following calls to this group will be queued while the caller receives the ringing tone, which means that the caller will not notify that the call is queued.
All further calls to the same hunting group will be linked to the queue, and remain in the queue until they will be answered or in case of external calls they exceed the supervision time out (command 1413).

A call to an other hunting group which is free will be immediately presented to the available member of that group.

If one of the group members answers the incoming call, the related group becomes free for new calls and the next queued call from the queue (first in/first out principal) will be presented to the remaining free members.

If a call will be answered by more than one member nearly at the same time, the first member will be connected to the presented caller. The second member will be connected to the first queued caller from the queue of the same hunting group. If there is no more call in the queue the second extension will receive dialtone.

If a call will be answered and an other group call is queued the display of the remaining members will be updated immediately with the data of the next caller. The ring cadence will follow according to the type of the next presented caller.

All group members are busy

If all group members are busy, the call will be queued in the same way as described above, whereby the first call in queue will periodically poll for a free member. The polling interval is five seconds. If at least one free member will be detected the call will be presented and will be released from the queue.

All members of the group are blocked, diverted or no member is configured

If all members of a group are blocked, diverted or no member is configured, no queuing will be performed. An internal call will be disconnected and an external call will be routed to the reroute position of the incoming trunk.

Supervision of the hunting group

If a supervision of a hunting group with parallel distribution is programmed on a function key of an extension, the key will indicate the status of that group.

During call presentation or call queuing, the key will switch to periodical flashing.

If the call is answered by a member, the LED will be turned off. It is also turned off, if the group is idle or blocked.

If the key is pressed during flashing of the LED the extension will pick up the call from the according hunting group.

If the key is pressed during idle state (LED is off) the extension will receive blocked tone because there is no call to pick up from the dedicated group.

It is not possible to setup a call to a hunting group by pressing a supervision key, the key can be only used as pick up key.

Capacity

Up to16 PBX groups can be programmed.

Each PBX group can have up to 20 members.

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
		220/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved	Kontr/Checked	Datum/Date	Rev / Tillhör/Referens-File/Reference
		99-07-15	C

Limitations

General

- If a group member is already busy with a hunt call, then it is not possible to present more group hunting calls on her/his telephone.
- During the presentation of a group hunting call, the respective extension will be busy for another incoming or outgoing call.
- It is not possible to define S-bus terminals as group members, because they are dedicated to be trunk individuals.

Serial distribution

- If a hunting group is busy, it is neither possible to order call back nor to effect intrusion.
- It is not possible to program a supervision key on an hunting group with serial distribution

Parallel distribution

- No **Line 2** support.
- No free seating CTI operators, active ACD Agents, facilities and operators are supported as group members
- No caller list entry will be generated, because during ringing the trunk is connected to the group and not to a member.
- Auto answer is not possible.
- Analogue telephones
  For analogue extensions it is not possible to enable ringing for all individuals on the same board at the same time. An analogue extension board (ELU-A) can provide the ringing voltage only for one instrument at the same time. The request for all other instruments will be queued. In that case the ringing signal will be multiplexed over the queued instruments. The repetition rate of the ringing signal will go down depending on the number of parallel ringing instruments located on the same board. Recommendation: Distribute the group members over different ELU-A boards if possible.
- Cordless telephones
  Due to the capacity limitations in the cordless system, only 8 cordless telephones may be assigned as group members. This refers to single cordless extensions, as well as Tandem Units with cordless extensions.

Programming

The following commands are only accessible via RASC.

For a hunting group to be utilised the group must first have been created and assigned a directory number.

5402
Create PBX-group

Using this command a new hunting group with the desired directory number can be created.

The group may be given a random directory number, if there is one that does not conflict with existing directory numbers. (See command group 56).

5502
Delete PBX-group

This command deletes a hunting group.

5609
Alter PBX-group number

With this command it is possible to change the directory number and the name of a hunting group.

If you want to change the number to a new number that is in conflict with the old number this cannot be done directly. In such cases first change to a random free number and then change to the desired number.

The following commands are accessible via RASC and System telephones

3501
Hunt order

The hunt order for the group can be altered

```
10 Jul  14:40  +15°
CYCLIC SELECTION ?    3501 xxxx        z
  backward  forward     c/i      return
```

xxxx Enter group call number

z Enter desired function:

Valid data: 0 = cyclic call distribution
1 = sequential call distribution
2 = parallel call distribution

Default data: 0 = cyclic call distribution

It is not possible to select parallel distribution from a system telephone by command 3501.

3401
Group members

The directory numbers that are members of the group need to be programmed.

Initially there are no members.

```
10 Jul 14:40   +15°
PBX-MEMBER'S DIR.NO   3401 xxxx yy  zzzz
 backward  forward     c/i      return
```

xxxx Enter group call number

yy Position number in group 0 - 19

zzzz Enter member's directory number.
If existing member is to be erased, press
- -key

In case of the selection of parallel distribution via RASC, the programming of members via command 3401 is not possible from an instrument - only scrolling through the list is allowed to do.

Equipment

FECU

To use the feature Group (PBX)-hunting with parallel distribution, a FECU has to be connected to the CPU-D4.

An unauthorized call to a group, which has programmed parallel distribution, will be handled with the default programming mode (cyclic distribution). The warning "Feature protected by FECU" will be generated after each incoming call to such a group.

For detailed description see Facility Description - General, document 155 34-ASB 150 02 Uen.

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
SEA/TB/MP T.Preißner	SEA/TB/X	240/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved / Kontr/Checked		Datum/Date / Rev	Tillhör/Referens-File/Reference
SEA/TB/MP		98-01-30 / A	ASB 150 02
		Database reference	
		240.fm	

HOT LINE

Definition

Immediate hot line

Immediate hot line means that an extension is programmed so that when the user lifts the handset or presses the **On/Off**-key a call will be initiated automatically to a predetermined party.

Delayed hot line

Delayed hot line means that when someone lifts the handset or presses the **On/Off**-key there will be a programmable delay before the call is sent to the predetermined party. This gives the user an opportunity to dial any destination number.

Use

Hot line can be used among other things for:

- Alarm telephones
- Lift telephones
- Taxi telephones
- Hotel foyers
- Entry phones
- Modems

Calls can be initiated both to internal and external parties.

For external parties the use of a common abbreviated number is mandatory.

Operation

All telephones

Outgoing calls

An outgoing call is initiated either by lifting the handset or pressing the **On/Off**-key.

From a system telephone it is possible to call any extension by dialling the relevant extension number directly or by pressing an optional traffic function key.

Incoming calls

An incoming call to the extension is announced and answered as from a normal extension.

Capacity

Each extension can be programmed for the hot line function.

The programmable number comprises a maximum of four digits.

Limitations

In order to access an external number, the programmed number must be a common abbreviated number.

An analogue extension telephone programmed for immediate hot-line, cannot be used for other outgoing calls.

Programming

0116
Programming of hot line

To establish the hot line function from an extension it is necessary to program the relevant directory number.

```
10 Jul 14:40   +15˚
HOT LINE              0116 xxxx     zzzz
 backward  forward     c/i      return
```

xxxx	Enter extension's directory number
zzzz	Enter receiving party's directory number (Internal directory number or common abbreviated number).

0144
Time for delayed hot line

```
10 Jul 14:40   +15˚
HOT LINE DELAY TIME   0144 xxxx      zzz
 backward  forward     c/i      return
```

xxxx	Enter extension's directory number
zzz	Enter delay time between 1 - 255 seconds. Default value is 0 = Immediate Hot Line

Equipment

None.

Prepared	Subject responsible	Document no.		
SEA/EBBMP Pfleger H.	SEA/EBBX/E	241/155 34-ASB 150 02 Uen		
Doc respons/Approved	Checked	Date	Rev.	File reference
SEA/EBBMP		99-07-15	E	ASB 150 02
		Database reference		
		241.fm		

HOTEL FACILITIES

Contents **Page**

HOTEL GENERAL 2

GUEST-ROOM FACILITIES. 3

BLOCKING ROOM-TO-ROOM DIALLING AND DID 10

MESSAGE FACILITY. 14

RECEPTION EXTENSION 16

ROOM STATUS 20

SERVICE EXTENSION 22

WAKE-UP FACILITY 24

Prepared	Subject responsible	Document no.	
		241/155 34-ASB 150 02 Uen	
Doc respons/Approved	Checked	Date	Rev. / File reference
		99-07-15	E

HOTEL GENERAL

Definition

ASB 150 02 can be utilised as a communication system for hotels.

Use

Extensions can be freely distributed among:

- administration extensions
- service extensions
- guest-room extensions

Operation

Check-in/-out is possible from:

- an EXECUTIVE telephone
  (See RECEPTION EXTENSION in this document)
- Hotel computer
  (see Hotel Computer in this document)

Guests can utilise the following facilities:

- Do not disturb
- Bypass the do-not-disturb function
- Diversion on busy
- Diversion on no reply
- Wake-up
- Message system
- Mailbox system
- Direct call keys to various service functions
- On-hook dialling
- Loudspeaker
- Group listening

Service telephones can be grouped with the possibility of diversion to other service telephones.

Hotel Computer

A hotel computer can be used to render various administrative functions in a hotel more effective.

In the hotel version of ASB 150 02 it is possible to connect a PC-based peripheral hotel computer.

ASB 150 02 is also adapted for the exchange of information with other (different) hotel computer.

This means that the hotel computer must be configured, whereby information exchange and protocol agree with one of the protocols offered by ASB 150 02.

For further information contact your supplier.

The use of other hotel computers depends:

- on their compliance with the protocol and format for information exchange in accordance with document INTERWORK DESCRIPTION (1 - 9/155 19-ASB 150 02 Uen) These documents are only for "internal information" and therefore have to be ordered separately. Please contact your local supplier in this respect.
- on which information can be exchanged between ASB150 02 and the hotel computer.

Capacity

ASB 150 02 can have a maximum of 288 extensions in a hotel configuration.

Prepared	Subject responsible	Document no.	
		241/155 34-ASB 150 02 Uen	
Doc respons/Approved	Checked	Date	Rev.	File reference
		99-07-15	E	

GUEST-ROOM FACILITIES

Definition

Guest-room facilities are those facilities that can be activated from a guest-room telephone.

The following can serve as a guest-room telephone:

- analogue rotary dial - or DTMF telephone
- BASIC telephone
- ECONOMYplus telephone
- STANDARD telephone

The following description relates first and foremost to digital telephones.

Use

A guest-room telephone is equipped with a number of special keys that can be used for certain facilities and direct calls to service quarters.

Message / Mailbox system

One key and one lamp.

The lamp flashes to indicate that a message is waiting.

Wake-up

One key and one lamp.

When WAKE-UP is activated, the lamp glows steadily.

Do not disturb

One key and one lamp.

When do not disturb is activated the lamp glows steadily.

Bypass the do-not-disturb function

It is possible to bypass the do-not-disturb function.

Diversion on busy

If diversion on busy is configured for a guest-room telephone, all incoming calls to the busy guestroom will be diverted to a defined divertee position (e.g. reception)

Diversion on no reply

If diversion on no reply is configured for a guest-room telephone, all incoming calls to the guest-room will be diverted on no reply to a defined divertee position (e.g. reception)

On-hook dialling

It is possible to dial without lifting the receiver.

Group listening

Because of the loudspeaker, all people in a room have the possibility to listen to a call.

Background music

If there are no calls going on, background music can be activated.

Loudspeaker paging

You can denote a call from a system telephone to be announced via the loudspeakers from other telephones.

Adjustable volume

You can change the volume of the voices.

Ring character and volume

By programming the ECONOMYplus or STANDARD telephone as a guest-telephone, the default values will be valid independent of the adjustments for this extension !

You can NOT adjust:

- Ring character (default: 5)
- Ring volume (default: 5)
- Ring volume constant or increasing (default: increasing)

These measures makes sure that the programming is valid for all the guests (e.g. the present guest cannot have an other configuration as the former one.)

Call keys to service quarters

Keys facilitate direct calls to the public network, operator and service quarters.

The following keys exist only on the BASIC-, ECONOMYplus- and STANDARD telephones.

The keys have symbols for the following service quarters:

- wake-up
- Message/Mailbox
- Do-not-disturb
- room cleaner *
- reception
- restaurant
- information *
- room service *
- operator *
- outgoing call

* not available on the BASIC Telephone

Operation

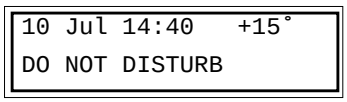
Message waiting

See MESSAGE SYSTEM,
document 341/155 34-ASB 150 02 Uen.

Do not disturb

To order

By pressing the "do not disturb" key the guest can prevent calls to the telephone. When "do not disturb" is activated, the associated lamp glows steadily.
Telephones equipped with a display (STANDARD) will show:



Calls to this guest extension will now be redirected to a programmed answering position.
On the display the operator can see that the called guest has an ongoing "do not disturb".
If the call is important, the operator has the possibility to override the "do not disturb" marking.

Cancellation

An ongoing "do not disturb" is cancelled by pressing the relevant key. The associated lamp extinguishes.

Bypass the do-not-disturb function

It is possible to bypass the do not disturb function.
See BYPASS CALL DIVERSION AND FOLLOW ME,
document 121/155 34-ASB 150 02 Uen.

Diversion on busy

The function is used when one wishes to be certain that call attempts will be answered, even when busy tone is encountered.

It is possible to distinguish between different cases for diversion on busy depending on whether it is an incoming external or internal call.

Example:
Call diversion on busy at a defined guest room should

only take place for incoming external calls. The internal callers will encounter busy and may activate automatic call back.

Diversion on no reply

It is possible to distinguish between different cases for diversion on no reply depending on whether it is an incoming external or internal call.
Example:
Call diversion on no reply at a defined guest room should only take place for incoming external calls. The internal callers may activate "call back on free extension", when the called guest room does not answer.

Wake-up

See chapter WAKE-UP FACILITY in this document.

On hook dialling

It is possible to dial the number without lifting the receiver.

When the opposite party answers the call, the user has to lift the handset.

Group listening

Because of the loudspeaker, all people in a room have the possibility to listen to a call.

Background music

If there are no calls going on, Background music can be activated.

The music/information source (max. 3) can be connected to a free trunk.

To activate background music:

- Dial selected number of the facility or
- Press programmed name selection key

To deactivate background music:

- Press **Clear**-key or
- Dial directory number again

For detailed explanation see BACKGROUND MUSIC, facility description 120/155 34-ASB 150 02 Uen.

Loudspeaker paging

Loudspeaker paging denotes a call from a system telephone that is announced via the loudspeakers in all or in groups of system telephones with loudspeakers.
Guest-room telephones can be included in paging groups. They can only listen to the paging but they cannot answer.

Adjustable volume

You can easily change the volume of the voices from the telephone by pressing the volume-control buttons.

Direct call (immediate answer) keys

By lifting the handset and pressing one of the symbol keys a direct call is initiated to the service quarter represented by the symbol.

Capacity

The number of guest-room telephones is limited only by the maximum number of extensions in the system.

General list of available features:

FACILITY (accessable)	STANDARD DBC 3212	ECONOMYplus DBC 3211	BASIC DBC 3210	ECONOMY DBC 2601	ECONOMY DBC 2751H	BASIC DBC 3199	ANALOGUE DTMF	ANALOGUE DECADIC
Inquiry	No	No	No	No	No	Yes	Yes	Yes
Transfer	No	No	No	No	No	Yes	Yes	Yes
Do not disturb	Yes	Yes	Yes	Yes	Yes	No	No	No
Div. on busy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Div.on no reply	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Div. direct	No	No	No	No	No	No	No	No
Follow me	No	No	No	No	No	No	No	No
Wake-up	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Message	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
On-hook dial.	Yes	Yes	Yes	No	No	No	No	No
Group list.	Yes	Yes	Yes	No	No	No	No	No
Backgr. music	Yes	Yes	Yes	No	Yes	No	No	No
Louds. paging	Yes	Yes	Yes	No	Yes	No	No	No

Limitations

The different types of guest room telephones have limitations on certain facilities. See table above.

Programming

0118
Guest extensions?

Extensions that are to be equipped with guest-room telephones are to be programmed accordingly.

It is not necessary to program a name into the integrated telephone directory for the guest room extension.

If a name has been programmed it is to be erased via command 6601.

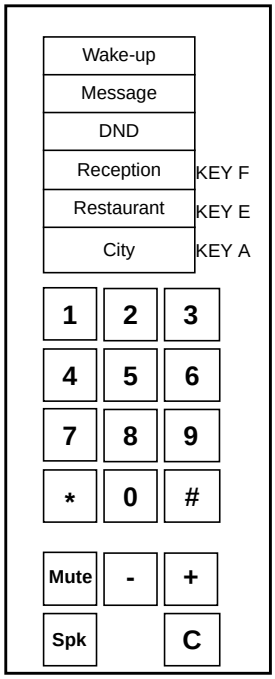
```
10 Jul 14:40   +15°
GUEST EXTENSION ?     0118 xxxx        z
 backward  forward     c/i      return
```

xxxx Enter guest-room telephone's directory number (1 - 4 digits)
z Enter relevant function.
Y = Guest-room extension.
N = Not guest-room extension (default data)

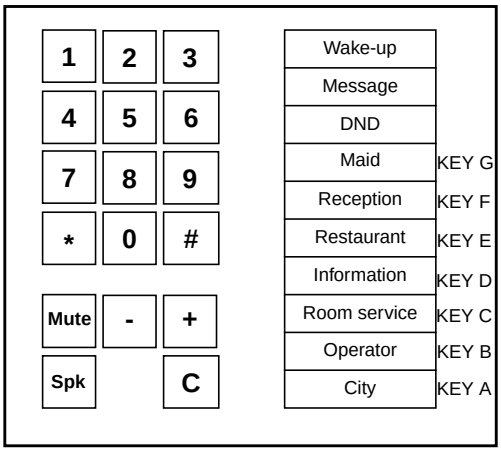
8030 - 8036
Guest tolephones dial by name keys

The direct call keys to hotel facilities have common answering positions for all guest-rooms.

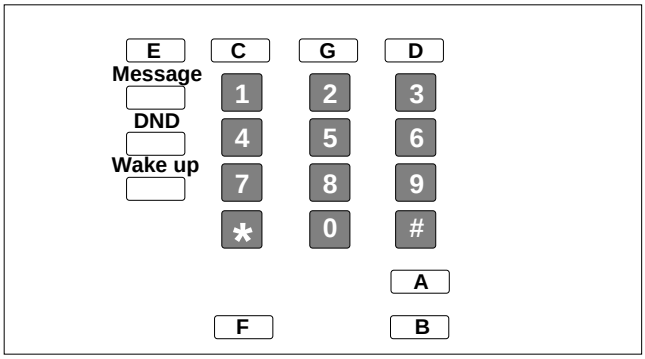
The figure below shows the position of the three keys, on the BASIC Telephone, DBC 210:



The figure below shows the position of the seven keys, on the ECONOMYplus DBC 211 and STANDARD DBC 212 Telephone:

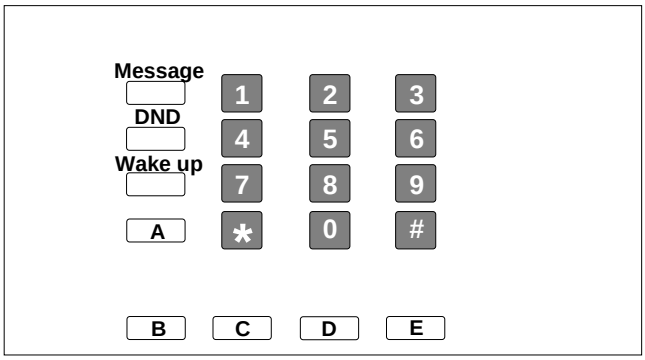


The figure below shows the position of the seven keys, on the ECONOMY Telephone, DBC 601:



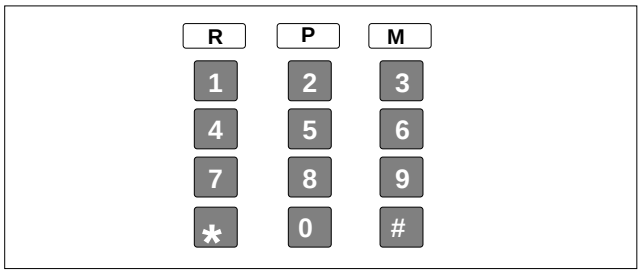
The figure below shows the position of the 5 keys, on the ECONOMY Telephone, DBC 751H:

.



The figure below shows the position of the keys on the BASIC telephone, DBC 199:

Key **P** can be programmed and corresponds to KEY A (= "City") on the BASIC / ECONOMYplus / STANDARD Telephone.




```
10 Jul 14:40   +15°
GUEST INSTR. KEY A    8030          zzzz
 backward  forward     c/i       return
```

zzzz Enter relevant directory number (1 - 4 digits)

For the STANDARD / ECONOMYplus Telephone:

Step to commands 8031 - 8036 and repeat the procedure for the keys B - G.

Programming of "do not disturb" function

0112
Divertion address

The operator is to be selected as divertee address as he/she has the possibility to override a do not disturb marking.

```
10 Jul 14:40   +15°
DIVERSION ADDRESS     0112 xxxx     zzzz
 backward  forward     c/i       return
```

zzzz Enter operator's directory number

Repeat command 0112 for all guest-room extensions.

Programming of
"Bypass the do not disturb function"

See BYPASS CALL DIVERSION AND FOLLOW ME, document 121/155 34-ASB 150 02 Uen.

Programming of "diversion on busy" function

First it has to be programmed what kind of incoming calls should be diverted (incoming external or internal calls). Step to command 0111 or / and 0158.
The divertee position for this feature will be the same as used for "Do not disturb".

0111
Diversion on busy internal?

The extension must be programmed for diversion on busy for incoming internal calls

```
10 Jul 14:40   +15°
DIV.ON BUSY INT.?   0111   xxxx      z
 backward  forward     c/i       return
```

xxxx Enter extension's directory number

z Enter relevant function:
Y = Yes.
N = No (default data)

Step to command 0158.

0158
Diversion on busy, external

The extension must be programmed for diversion on busy for incoming external calls.

```
10 Jul 14:40   +15°
DIV.ON BUSY EXT.?   0158   xxxx      z
 backward  forward     c/i       return
```

xxxx Enter extension's directory number

z Enter relevant function:
Y = Yes.
N = No (default data)

Programming of "diversion on no reply" function

First it has to be programmed what kind of incoming calls should be diverted (incoming external or internal calls). Step to command 0110 or / and 0157.
The divertee position for this feature will be the same as used for "Do not disturb".

0110
Diversion on no reply internal?

```
10 Jul 14:40   +15°
DIV.ON NO REPLY INT?  0110    xxxx     z
 backward  forward     c/i      return
```

xxxx Enter extension's directory number

z Enter function:
Y = Yes.
N = No

Step to command 0157.

0157
Diversion on no reply external

```
10 Jul 14:40   +15°
DIV.ON NO REPLY EXT?  0157    xxxx    z
 backward  forward     c/i      return
```

xxxx Enter extension's directory number

z Enter function:
Y = Yes.
N = No

8004
Hotel answering position

It is possible to program, for example, the operator as answering position for diverted guest-room calls.

```
10 Jul 14:40   +15°
HOTEL ANSW. POS.      8004          zzzz
 backward  forward     c/i      return
```

zzzz Enter required directory number (1 - 4 digits).
Default value = 9

For the programming of WAKE-UP prerequisites, see this document, WAKE-UP FACILITY.

For the programming of MESSAGE prerequisites, see MESSAGE SYSTEM, document 341/155 34-ASB 150 02 Uen.

Equipment

Guest-rooms can be equipped with a BASIC -, ECONOMY-, STANDARD- and Analogue telephone.

A VMU-D/VMU-HD/MFU board is required if voice messages are to be supplied for the WAKE-UP facility.

BLOCKING ROOM-TO-ROOM DIALLING AND DID

Definition

The feature enables the receptionist to allow or to prevent that calls between guest rooms are be held and that external caller can directly reach the guest rooms by using DID.

The function allowes controlling for individual guest rooms as well as for all guest rooms.

Use

The feature offers the receptionist the possibility to provide better service to the guest by blocking malicious calls from other guest rooms (likely done by kids) or by blocking direct in-dialling calls to the guest room (e.g. during night hours).

If a guest room being not allowed to dial to other guest rooms tries to make a call or a DID call comes into a blocked guest room, a routing will automatically take place to the hotel answering position.

Operation

Time controlled

At certain times, it is possible to prevent room to room and DID calls general for all extensions.

Two times, one for automatic activation and one for automatic deactivation, can be programmed.

Manually controlled

If the function is activated manually, it is up to the receptionist when he deactivates the function again.

Calls initiated to guest rooms when the blocking period is activated (room to room, DID or both) will be diverted to the hotel answering position that can interconnect (even blocked) parties if so desired.

The function is called via a directory number, ***34#**, that is stored suitably on name selection keys.

The function can also be activated with the help of a programmed key. The display shows:

```
10 Jul 14:40   +15°
BLOCK ROOM TO ROOM TRAFFIC / DID
indiv      system        clear
```

Press INDIV to activate or deactivate individual blocking of specific guest-room extensions, or press SYSTEM to activate or deactivate general blocking of the whole system.

Individual blocking of specific extensions

```
10 Jul 14:40   +15°
GUEST ROOM NUMBER? xxxx
                          clear      return
```

xxxx	Enter the guest room number
clear	Press to go back to idle state
return	Press to go back to the previous menu

After having entered the guest-room number the display shows always the actual status of the system or the individual extension:

```
10 Jul 14:40   +15°
ROOM TO ROOM / DID: 204
RTR block    DID block     clear     return
```

or

```
RTR open     DID open      clear     return
```

RTR block	Room to room traffic is blocked. Press to allow RTR traffic.
DID block	Direct in-dialling is blocked. Press to open for DID calls.
RTR open	Room to room traffic is allowed. Press to block RTR traffic.
DID open	Direct in-dialling is open. Press to block DID calls.
clear	Press to go back to idle state
return	Press to go back to the previous menu

To confirm the new value press 2nd + #.

Blocking room-to-room and DID calls in the whole system

```
10 Jul 14:40   +15°
SYSTEM LEVEL
RTR block   DID block     clear     return
```

or

```
RTR open    DID open      clear     return
```

RTR block	Room to room traffic is blocked. Press to allow RTR traffic.
DID block	Direct in-dialling is blocked. Press to open for DID calls.
RTR open	Room to room traffic is allowed. Press to block RTR traffic.
DID open	Direct in-dialling is open. Press to block DID calls.
clear	Press to go back to idle state.
return	Press to go back to the previous menu.

To confirm the new value press 2nd + #.

Capacity / Limitations

Specific blockings being done on individual base will not be affected by general blocking or opening.

In case of a checkout all individual settings will be set to the default value (RTR and DID open) at the next check in.
Is during the check in a generell blocking active (time controlled or manually) then it is automatically also valid for the new guest.

Programming

8004
Hotel answering position

It is possible to program, for example, the operator as answering position for diverted guest-room calls.

```
10 Jul 14:40   +15°
HOTEL ANSW. POS.      8004          zzzz
 backward   forward                 return
```

zzzz Enter required directory number (1 - 4 digits).
Default value = 9

8002 - 8003
Define the time during which room-to-room traffic shall be blocked for the system

```
10 Jul 14:40   +15°
RTR/DID BAR      8002                zz
 backward    forward               return
```

zz Enter time when blocking shall commence (00 - 23).
Default value = 00

```
10 Jul 14:40   +15°
RTR/DID OPEN     8003                zz
 backward    forward               return
```

zz Enter time when blocking shall cease (00 - 23).
Default value = 00

8021
RTR/DID time bar. status

This command states if RTR, DID or both types should be (de)activated at the programmed time.

```
10 Jul 14:40   +15°
RTR/DID TIME CONTROL?  3070   xx        z
 backward  forward     c/i      return
```

z 1 RTR & DID calls
2 RTR calls
3 DID calls

Default data: 1

3070
Room to room / DID bar?

The extension(s) that is/are to possess the possibility to manually block room-to-room calls shall have a facility (cos) category where the function is activated.

```
10 Jul 14:40   +15°
ROOM TO ROOM BAR ?   3070   xx        z
 backward  forward     c/i      return
```

xx Enter facility (cos) category

z Enter Y = blocking permitted

0101
Facility COS

```
10 Jul 14:40   +15°
FACILITY COS          0101 xxxx       zz
 backward  forward     c/i      return
```

xxxx Enter extension's directory number

zz Enter required facility category (00 - 15)

0163
RTR from extension enabled?

This command states whether or not the extension should be able to make room-to-room-calls. The command shows always the actual setting done by the procedure *34#.

Valid data: YES / NO
YES (Do not block RTR calls)
NO (Block RTR calls)

Default data:YES

0164
DID to extension enabled?

This command states whether the extension should receive DID calls or not.

Valid data: YES (DID calls are allowed)
NO (DID calls to the extension are blocked)

Default data:YES

0302
Associated number

```
10 Jul 14:40   +15°
FUNCTION OF KEY       0301 xxxx yy    zz
 backward  forward     c/i      return
```

xxxx Enter extension's directory number

yy Enter relevant key (00 - 48)

zz Enter code 10

Step to command 0302

```
10 Jul 14:40   +15°
ASSOCIATED NUMBER     0302 xxxx yy  zzzz
 backward  forward     c/i      return
```

zzzz Enter code *34#

Equipment

Service extensions and Reception require an EXECUTIVE telephone or/and a special PC - program.

Prepared	Subject responsible	Document no.	
		241/155 34-ASB 150 02 Uen	
Doc respons/Approved	Checked	Date	Rev. / File reference
		99-07-15	E

MESSAGE FACILITY

Definition

Message Facility means that internal and external callers can leave messages in ASB 150 02.

A flashing lamp on system telephones indicates that a message is waiting.

On extensions with analogue telephones message waiting is indicated by a special dial tone that the user hears when he lifts the handset.

Use

Messages can be left when one wishes to gain contact with someone who does not answer or, for example, if one wants to send information to one or more extensions in the system.

Operation

Message facility with a VMU-D board

STANDARD -, ECONOMYplus - and BASIC telephone

A message is signalled by the lamp adjacent to the message waiting key lighting and then flashing rapidly. The message is answered by lifting the handset and pressing the key.

If the message is a "call me" message a call will be made to the extension / service quarter that left the message.

The guest receives the ring control tone.

If the message is a voice message, the guest receives a short tone followed by the recorded message.

The message is repeated twice.

Analogue telephone

A message is signalled by the lamp adjacent to the message waiting key by lighting and then flashing rapidly. The message is answered by lifting the handset and dialing *59#.

The rest of the procedure is the same as for STANDARD -, ECONOMYplus and BASIC telephones.

Message facility with a VMU-HD/MFU board

You can assign each extension to a MAILBOX. This means that an extension has the opportunity to make a diversion to a mailbox.
In that case calls to the extension are diverted to the message system, where the caller can leave a voice message to the extension.

For more information, see MAILBOX SYSTEM, document 340/155 34-ASB 150 02 Uen.

Prepared	Subject responsible	Document no.	
		241/155 34-ASB 150 02 Uen	
Doc respons/Approved	Checked	Date	Rev. / File reference
		99-07-15	E

Capacity

There is no limit to the number of messages that an extension can send or receive.

The total number of messages in the system can amount to a maximum of 1000.

The number of voice messages is also limited by the available capacity on the VMU-D/VMU-HD/MFU board.

Stored messages are protected in the event of power failure.

Limitations

Capacity of speech channels:

VMU-D/VMU-HD	8 or 16
MFU	4

The function "retrieving messages" has a lower priority than the voice announcements to the external caller. To prevent that too many channels are blocked simultaneously by the retrieving function, it is possible to restrict the access to all channels.
If no voice channels are free for the internal retrieving, the following message is shown on the display (if any) of the caller:

STANDARD telephone

```
10 Jul 14:40   +15°
CONGESTION TRY LATER
```

If no voice channels are free, external retriever or telephone sets without a display will receive ringing tone until a voice channel is free again.
If there is no free voice channel within timeout, the external caller will be rerouted to the reroute position of the relevant trunk.

Programming

Message facility with a VMU-D board

For information concerning the message facility with a VMU-D, see MAILBOX SYSTEM, document 340/155 34-ASB 150 02 Uen.

Message facility with a VMU-HD/MFU board

For information concerning the message facility with a VMU-HD/MFU, see MAILBOX SYSTEM, document 340/155 34-ASB 150 02 Uen.

Equipment

VMU-D/VMU-HD/MFU board(s) must be installed.

RECEPTION EXTENSION

Definition

A reception extension is used to check guests in and out.

Use

The function is employed in all types of hotel systems, both with and without a hotel computer connected.

Via the telephone the receptionist can:

- check in guests
- check out guests
- order WAKE-UP on behalf of guests
- open and block guest-room telephones
- alter the status of guest-rooms
- bypass "do not disturb"

Operation

The function can be handled from both the reception telephone and a connected hotel computer.

For operation via a connected hotel computer see the description of this computer.

Check-in via EXECUTIVE telephone

The check-in function is activated by entering a code or, if it has been stored on a programmable key, by pressing this key.

*** 31 #**

The display now shows:

```
10 Jul 14:40   +15°
GUEST ROOM NUMBER ?  _
            clear
```

Enter relevant room number and press #

The display shows:

```
10 Jul 14:40   +15°
                    203
vacant    barred    cleaned   return
```

Press menu key **vacant** and the menu text changes to **occupied.**

Press #

The display shows:

```
10 Jul 14:40   +15°
GUEST NAME?
 back       clear                return
```

Enter the guest's name by using the key pad.

```
10 Jul 14:40   +15°
JOHN_
 back       clear                return
```

Press #.

The display shows the day's date:

```
10 Jul 14:40   +15°
DATE OF CHECK-IN     920710
back     clear                    return
```

If the date is correct, press #.

To alter the check-in date:

Enter new date, press #.

The display shows:

```
10 Jul 14:40   +15°
CHECK-OUT DATE?      _
 back       clear                return
```

Enter planned check-out date

Press #.

The display shows:

```
10 Jul 14:40   +15°
LANGUAGE?           _
 back        clear              return
```

Enter the language preferred by the guest, with a maximum of four characters.

Press #.

The abbreviations for languages are used by the system for selecting the correct greeting.

The display shows:

```
10 Jul 14:40   +15°
CREDIT CARD         _
 back        clear              return
```

Enter type of credit card if the guest has one, with a maximum of four characters, press #.

The display now shows all entered data:

```
10 Jul 14:40   +15°
JOHNSON A           0710-0712 ENG  AMEX
            clear      change    return
```

If the entered data is correct, press #.
Press the menu key **change** to revise the guest data.

The display now shows that the system is ready to check in a new guest.

```
10 Jul 14:40   +15°
GUEST ROOM NUMBER?  _
         clear
```

If no more guests are to be checked in, press menu key **clear** to revert to idle mode.

With the check-in procedure the latest WAKE-UP order that has been activated before in that room's telephone will be deleted.

Options during a check-in procedure

During the check-in procedure the user may select menu options.

back The check-in procedure is finished. The entered check-in data is stored and the system is prepared for another check-in.

clear The check-in procedure is interrupted and the entered data is erased. The display shows idle information.

return Will step the check-in procedure backwards by one step with each key depression

Check-out via EXECUTIVE telephone

Key code ***31#** or press programmed key.

The display shows:

```
10 Jul 14:40   +15°
GUEST ROOM NUMBER   _
         clear
```

The display shows the guest's name:

```
10 Jul 14:40   +15°
JOHNSON ANDREW       203
occupied   open    uncleaned       back
```

On check-out press menu key **occupied.**

If there are unanswered messages in the message system of the guest, the display will show:

```
 10 Jul 14:40   +15°
UNANSWERED MESSAGES !
 return       clear
```

After clearing or reading the messages, the menu text changes to **vacant.**

Press #

```
10 Jul 14:40   +15°
JOHNSON ANDREW     203   ATS      1234.00
check-out    clear                back
```

The display shows the accumulated cost. "ATS" is an example for a currency identifier. This currency identifier can be placed before or after the accumulated cost (this depends on system programming for call metering).

Press the menu key **check-out**.

The display shows that the room is free, by erasure of the name.

```
10 Jul 14:40   +15°
                     203
            clear                 next
```

The menu keys give you the choice to return to idle or to check-out the next guest room.
Return to idle: Press **clear**.
Check out next guest room: Press **next**.

After the check-out of the guest's room the latest WAKE-UP order at this room's telephone will remain active:

- up to a new check-in in this room, or
- during the next 24 hours.

Options during a check-out procedure

During the check-out procedure the user has the following menu options.

check-out Use this menu key to clear the guest name and the accumulated cost.

clear The check-out procedure is interrupted. The display shows idle information

return Will step the check-out procedure backwards one step on each key depression

next This menu key offers a quick access for check-out of the next guest room.

To open and block guest-room telephones

A guest-room telephone is opened automatically for external traffic on check-in.

The guest-room telephone is then blocked automatically on check-out with the exception that the WAKE-UP information will be active for the next 24 hours, or until a new check-in will be done for that room.

The reception extension has the possibility to manually open or block guest-room telephones.

When the guest-room number is dialled, the display shows whether the extension is open or blocked.

```
10 Jul 14:40   +15°
JOHNSON ANDREW       203
occupied   open    uncleaned   return
```

The alteration is made by pressing menu key **open**.
Menu text changes to **barred**.
Press #.

To order WAKE-UP for guest rooms

See this document, WAKE-UP FACILITY.

To read and update room status

See this document, ROOM STATUS.

To bypass "do not disturb"

See DIVERSION DIRECT,
document 165/155 34 ASB 150 02 Uen.

Capacity

All users who possess a facility category that permits check-ins/-outs can undertake the various functions.

This means that several persons can help each other to deal with check-ins/-outs.

Limitations

Only one extension at a time can influence data for a certain guest-room.

Programming

To assign a category to the Reception telephone

Those extensions that are to participate in reception duties are to be assigned a facility category with the required categories set.

3060 - 3063
Programming of the facility category list

This function shall be accessible for Reception, operator and other service telephones.

```
10 Jul 14:40   +15°
ROOM STATUS VIEW      3060   xx        z
 backward  forward     c/i      return
```

xx Enter required ACOS (0 - 15)
z Enter required function (Y/N).
Default value = N

Step to commands 3061 - 3063 and repeat procedure.

The command is set for Reception extensions.

```
10 Jul 14:40   +15°
CHECKIN/OUT ?         3061   xx        z
 backward  forward     c/i      return
```

The command is set for guest-room telephones that are to be able to order WAKE-UP.

```
10 Jul 14:40   +15°
WAKE-UP ORDERING      3062   xx        z
 backward  forward     c/i      return
```

The command is set for extensions, that are to be able to order WAKE-UP on behalf of the guests, e.g. the Receptionist.

```
10 Jul 14:40   +15°
WAKE-UP FOR OTHERS ?  3063   xx        z
 backward  forward     c/i      return
```

0101
Facility COS

The extensions in the hotel system are to be assigned different facility categories dependent on function.

The extensions can be suitably divided into the following groups:

- administrative extensions in general
- reception extensions, operator
- service extensions
- guest-room extensions

```
10 Jul 14:40   +15°
FACILITY COS          0101 xxxx       zz
 backward  forward     c/i      return
```

xxxx Enter extension's directory number
zz Enter selected ACOS (0 - 15)

Store codes for WAKE-UP and check-in/-out on one key.
To simplify handling it is advisable to store the call codes for WAKE-UP and check-in on free name selection keys.
This can be done directly via individual programming. See chapter INDIVIDUAL PROGRAMMING in document FACILITY DESCRIPTION (155 34-ASB 150 02 Uen).
This can also be achieved via system programming. See NAME SELECTION, document 360/155 34-ASB 150 02 Uen.

Prepared	Subject responsible	Document no.		
		241/155 34-ASB 150 02 Uen		
Doc respons/Approved	Checked	Date	Rev.	File reference
		99-07-15	E	

Equipment

The function requires an EXECUTIVE telephone or OPERATOR console.

Prepared	Subject responsible	Document no.		
		241/155 34-ASB 150 02 Uen		
Doc respons/Approved	Checked	Date	Rev.	File reference
		99-07-15	E	

ROOM STATUS

Definition

Room status denotes a facility in hotel exchanges that permits information from guest rooms to be sent to the system or connected hotel computer stating that the room has been/has not been cleaned.

Use

The facility is used when it is required that the hotel cleaner inform the system when the room has been cleaned.

If a hotel computer is connected, the status code will be transferred to this.

If a printer is connected, a printout will be initiated when an alteration is made.

Operation

To order from a guest-room telephone.

To activate the function from a guest room, the room cleaner enters the following sequence:

33 code (0 - 3) #

```
ROOM STATUS      X
```

X Code: 0 = cleaned
1 = uncleaned
2 = cleaned and checked
3 = not available

To order from Reception

From Reception room, status is altered by pressing the CHECK-IN key and dialling the room number.

```
10 Jul 14:40   +15°
JOHNSON ANDREW            203
occupied   open    uncleaned   return
```

Press the third menu key from the left in the display above shown as **uncleaned**.
The menu changes for each key depression.
When the required status is displayed, press #.

Capacity

The function can be called from all guest-rooms or from the Reception telephone.

Limitations

All rooms are marked as uncleaned at a stated time. This time can be set for the desired hour.

Programming

3060
Room status view?

```
10 Jul 14:40   +15°
ROOM STATUS VIEW ?    3060   xx        z
 backward  forward     c/i      return
```

xx State required ACOS (0 - 15)

z Enter required function.
Y = Permitted to read rooms status.
N = Not permitted to read room status.
Default data = N

8001
Room status change

The time can be stated per hour.

```
10 Jul 14:40   +15°
ROOM STATUS CHANGE    8001            zz
 backward  forward     c/i      return
```

zz Enter required hour (00 - 23).
Default value = 00

Equipment

None.

SERVICE EXTENSION

Definition

A service extension is an administration extension in a hotel system that has a special service function, e.g. room service, restaurant.

Use

Service quarters can be an individual service quarter for certain types of service.

A central service quarter answers calls that have not been answered by an individual service quarter due to overload or in case the individual service quarter is unoccupied.

Each service quarter can consist of one or more service telephones.

Individual service quarter

A service quarter such as room service or restaurant is designated "individual service quarter".

Each service quarter can consist of one or more service telephones.

The service quarter is suitably connected as a common answering position with one or more telephones.

Central service quarter

A central service quarter is one or more telephones that deal with calls when, for example, the normal answering position is closed or when traffic is too heavy at the normal answering position.

Operation

Service extensions can use their telephones like normal extensions.

The main task is to answer calls from guests.

For own outgoing traffic see the description of the respective function.

Individual service quarter

An incoming call to the service quarter is presented by the lamp of the answer key flashing rapidly.

The call is answered by pressing the key.

The display shows the name and number of the calling guest.

```
10 Jul 14:40   +15°
JOHNSON ANDREW            203& SPEECH
```

The "&" character indicates that the service extension, by pressing the **Read &** key, can obtain more information about the extension.

As long as the key is kept depressed the display shows:

```
10 Jul 14:40   +15°
JOHNSON ANDREW       0418-0420  ENG  AMEX
```

The second row now shows from left to right:

- guest name
- check-in date
- check-out date
- language spoken
- type of credit card

When certain types of hotel computers are connected, the credit card box will display (if any) VIP-information.

Common service quarter

A common answering position can have an answer key for each programmed answering position.

Ringing at the answer key is programmed as delayed.

A call that is not answered by the normal answering position within 10 seconds will ring at the common answering position.

Then, the common answering position can pick up calls when traffic is heavy.

The common answering position can provide an appropriate answer to calling guests because the ordinary answering positions are represented by different answer keys.

If the ordinary answering position has diverted its calls to the common answering position, information to this effect is obtained directly in conjunction with the call.

```
ROOM SERVICE                7
JOHNSON ANDREW            203& CALLING
```

Capacity

The number of service quarters is limited only by the number of fictive numbers = 16.

Limitations

None.

Programming

Grouping of service quarters

In small hotels the service quarter can consist of a single telephone which can be, for example, the Reception telephone.

For large hotels the service extensions can be grouped freely so that different service quarters can be assigned varying numbers of answering positions.

Each service function is represented by a key on the service telephone.

If several telephones exist, they are given the same keys.

For programming of the function see
CALL PICK UP - COMMON,
document 142/155 34-ASB 150 02 Uen.

Central service quarter

A central service quarter is programmed as divertee position for the individual service quarters.

If the individual service quarters have been grouped with the help of the call pick up - common function the central service quarter is to be programmed as a member of the group, but with delayed ringing.

Equipment

Service extensions shall be equipped with an EXECUTIVE or STANDARD telephone.

WAKE-UP FACILITY

Definition

WAKE-UP facility denotes a facility in a hotel system.

The facility is used to order, read and activate a WAKE-UP time.

Use

WAKE-UP can be ordered from the guest-room telephone and from the operator or Reception telephone.

The guest-room extension can receive a spoken WAKE-UP acknowledgement that also states the ordered WAKE-UP time.

When the WAKE-UP time arrives, the ordering guest is rung and a spoken WAKE-UP message is supplied.

Both WAKE-UP acknowledgement and WAKE-UP message can be supplied in a maximum of three languages.

The system automatically selects the language noted for the guest on check-in.

If the system has a connected hotel computer, it is also possible to execute orders via this computer.

When WAKE-UP is activated, the ordering guest is rung. If no answer is obtained, a number of new attempts (maximum five) can be made before the call is diverted to a preprogrammed extension, e.g. reception.

All WAKE-UPs can be logged and fed to a connected hotel computer or printer.

The WAKE-UP order remains activated during 24 hours after the check-out procedure, then it will be automatically deleted.

In cases when the guest room is needed before the above mentioned automatic deactivation, the WAKE-UP order will be deleted by the new check-in procedure for that room.

Operation

Functions from guest-room telephone

(If the guest telephone has no display, the user will get voice prompts.)

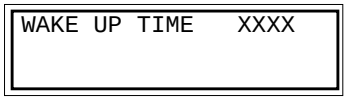
To order or alter WAKE-UP time:

BASIC-, ECONOMYplus and STANDARD Telephone

An order is executed as follows:

- press **Wake-up** key
- enter required time of day and then press # key

The display of the STANDARD telephone shows:



XXXX Enter wake-up time

- **Wake-up** lamp lights and glows steadily.

Analogue Telephones

- enter ***55***
- enter required time of day and then press # key

The time of day is always stated using the 24-hour mode (00 - 23).

The accuracy of the time indication is 5 minutes, which means that only 00, 05, 10, 15, 20, 25, 30, 35, 40, 45, 50 and 55 minutes can be stated.

If the guest programs a minute number that is not a 5-minutes interval, WAKE-UP and verification will be stated as the nearest lower 5-minutes step.

Example: 0812 is stored as 0810.
0919 is stored as 0915.

If a voice memory exists, confirmation will be supplied by stating the ordered WAKE-UP time.

The verification is supplied in the language noted during check-in.

WAKE-UP times are stated in hours and minutes.

If no voice memory board exists, verification tone will be supplied.

To verify WAKE-UP times:

- lift handset
- press **Wake-up** key or dial ***55***
- programmed WAKE-UP time

```
WAKE UP TIME   XXXX
```

XXXX Entered WAKE-UP time

- replace handset

To cancel WAKE-UP time:

- lift handset
- press **Wake-up** key or dial ***55***

```
WAKE UP TIME   XXXX
```

XXX Entered WAKE-UP time

- press # key
- lamp extinguishes
- replace handset

Activation of Wake-up

When the programmed time is reached, the guest will be rung.

When the guest answers, he/she hears a WAKE-UP message twice in the language noted, during check-in.

Wake up has been ordered from the receptionist telephone

If the wake up has been ordered by the receptionist telephone, it is neither possible for the guest to alter non to cancel the wake up order.

In that case the guest has to call the receptionist for modification.

Functions from reception telephone

Calls to the WAKE-UP function are initiated by dialling ***32#**, which should be stored on a name selection key.

See NAME SELECTION,
document 360/155 34-ASB 150 02 Uen.

The key is signalled "**Wake-up**".

To call the WAKE-UP function

Press the key for **Wake-up**.

The display shows:

```
10 Jul 14:40   +15°
GUEST ROOM NUMBER?   _
            clear
```

Enter guest-room number and press #.

The display shows:

```
10 Jul 14:40   +15°
JOHNSON ANDREW            203
 wake-up    clear              return
```

Press menu key **wake-up**

The display shows:

```
10 Jul 14:40   +15°
WAKE-UP TIME    _
            clear                 return
```

Enter required WAKE-UP time and press #.

The display shows:

```
10 Jul 14:40   +15°
GUEST ROOM NUMBER?   _
            clear
```

System is ready for a new wake-up order.

Options during wake-up ordering

During the wake-up ordering procedure there are the following options:

clear	The user will leave the wake-up mode.
return	Return will step the wake-up procedure backwards one step on each depression.
#	Always stores the time, shown as the wake-up time.

To verify WAKE-UP time

Repeat the procedure described above.

WAKE-UP time ordered, not answered and not erased.

The display shows:

```
10 Jul 14:40   +15°
WAKE-UP TIME 0730    NOT ANSWERED
            clear                return
```

WAKE-UP time ordered and answered by the guest.

```
10 Jul 14:40   +15°
WAKE-UP TIME 0730    GUEST ANSWER 0732
            clear                return
```

WAKE-UP time ordered, guest has not answered WAKE-UP, diverted to Reception.

```
10 Jul 14:40   +15°
WAKE-UP TIME 0730    ADMIN ANSWER 0732
            clear                return
```

WAKE-UP time ordered and erased.

```
10 Jul 14:40   +15°
WAKE-UP TIME 0730    CANCELLED AT 0715
            clear                return
```

Ordered time was not an exact 5-minute period:

```
10 Jul 14:40   +15°
WAKE-UP TIME 0932    STORED AS    0930
            clear                return
```

Terminate by pressing #.

NOTE: If # is pressed, when for instance verifying an answered wake-up call, a new time will be set. To just leave the information unchanged, press menu key **Clear**.

To clear wake-up time

The reception telephone may cancel any stored wake-up time, irrespective of whether the wake-up was ordered by the guest or the reception.

```
10 Jul 14:40   +15°
WAKE-UP TIME 0932    STORED AS    0930
            clear                return
```

When the ordered wake-up time is shown, the user may press **-** key to erase the time.

Press # to enter.

The display shows:

```
10 Jul 14:40   +15°
GUEST ROOM NUMBER?   _
            clear
```

Capacity

The system can activate WAKE-UP for an arbitrary number of guests at the same time.

Limitations

A maximum of five Wake-up attempts can be made.

Programming

Two commands in the facility category list are used to determine who shall have the possibility to order WAKE-UP.

See also CATEGORISATION, document 149/155 34-ASB 150 02 Uen.

3062
Wake-up ordering?

This command is used to determine which facility category shall be given the possibility to order WAKE-UP.

If the guests are to be given this possibility, they are to be placed in the selected category.

```
10 Jul 14:40   +15°
WAKE-UP ORDERING       3062   xx        z
 backward  forward     c/i      return
```

xx Enter required ACOS (0 - 15)

z Enter required function.
Y = WAKE-UP may be ordered (default data).
N = WAKE-UP may not be ordered

3063
Wake-up for others?

This command is used to state which facility category shall have the possibility to order WAKE-UP on behalf of others.

It is advisable to place the Reception telephone and operator in this group.

```
10 Jul 14:40   +15°
WAKE-UP FOR OTHERS    3063   xx        z
 backward  forward     c/i      return
```

xx Enter required ACOS (0 - 15)

z Enter required function.
Y = WAKE-UP may be ordered.
N = WAKE-UP may not be ordered.
Default data = N

Ring sequence on activation of WAKE-UP

It is possible to determine how many attempts at ringing may be made to the guest-room telephone before diversion ensues.

8006
Wake-up ring time

The permitted duration of ringing for each attempt is stated here.

```
10 Jul 14:40   +15°
WAKE-UP RING TIME     8006            zz
 backward  forward     c/i      return
```

zz Enter required time (0 - 59 seconds).
Default value = 30 seconds

8007
Wake-up ring pause

The time that shall elapse between each WAKE-UP attempt is stated here.

```
10 Jul 14:40   +15°
WAKE-UP RING PAUSE    8007             z
 backward  forward     c/i      return
```

z Enter required time in minutes (1 - 5).
Default value = 3

8008
Wake-up ring attempts

The number of WAKE-UP attempts before Reception is called is stated here.

```
10 Jul 14:40   +15°
WAKE-UP RING REPEAT   8008             z
 backward  forward     c/i      return
```

z Enter required number (1 - 5).
Default value = 3

8004
Hotel answering position

Here it is stated where an unanswered WAKE-UP call shall be diverted, e.g. to the operator or Reception.

```
10 Jul 14:40   +15°
HOTEL ANSWERING POS   8004          zzzz
 backward  forward     c/i      return
```

zzzz Enter directory number of required divertee position.
Default value = 9

Voice answer on ordering and on WAKE-UP

It is possible to program on the one hand a VOICE MESSAGE that is supplied as acknowledgement for WAKE-UP orders and on the other hand a VOICE MESSAGE when the WAKE-UP call is answered.

Both messages can be recorded in three different languages.

The WAKE-UP acknowledgement can also be complemented with the ordered WAKE-UP time announcement.

The WAKE-UP time announcement consists of two separate recorded messages:

- hour announcement and
- 5 minutes steps announcement,

recorded in three freely chosen languages.

4401
Recording of WAKE-UP acknowledgement and WAKE-UP message

The WAKE-UP acknowledgment and WAKE-UP message must be recorded in the selected languages.

```
10 Jul 14:40   +15°
VOICE ANNO 1-32       4401            >
 backward  forward     c/i      return
```

Press **Enter** key.

Select voice message (1 - 32).

For recording see VOICE MESSAGE, document 522/155 34-ASB 150 02 Uen.

4405 - 4410
Recording of stipulated time

If the WAKE-UP acknowledgement is to be complemented with a time indication, the hour and 5-minutes period must be recorded on the voice memory board, VMU-D.

Recording is undertaken in the same manner as for WAKE-UP messages and WAKE-UP acknowledgements.

The following commands are used:

LANGUAGE	HOUR	5 MIN.-STEPS
1	4405	4406
2	4407	4408
3	4409	4410

For recording see VOICE MESSAGE, document 522/155 34-ASB 150 02 Uen.

4701
Voice answer for voice answer number

The created voice answer numbers are to be associated to the recorded voice messages.

```
10 Jul 14:40   +15°
VOICE ANSWER REF      4701 xxxx  y  uuvv
 backward  forward     c/i      return
```

xxxx Enter directory number of created voice answer

y Enter sequence number for reference = 0

uuvv Enter 01 + voice reference created in command 4401

If there are several languages repeat the procedure.

5408
Create voice answer

The voice answer (recorded announcement) facility can be included in ASB 150. Voice answer means that the PABX can automatically supply a recorded announcement in reply to incoming calls for those directory numbers which have been defined for this facility.

With this command it is possible to create an answering position with automatic voice answer that has the stated directory number. The answer positions with automatic voice answer can be assigned any number that is free and does not conflict with existing directory numbers.

8012 - 8014
State reference for WAKE-UP message

The created directory numbers for voice messages are to be associated to the language variants that exist for WAKE-UP messages.

```
10 Jul 14:40   +15°
WAKE UP ANSW ANNO 1   8012          zzzz
 backward  forward     c/i      return
```

zzzz Enter directory number for voice answer.
Repeat procedure for languages 2 and 3

8009 - 8011
Enter texts to be used as language references

Enter the abbreviations for languages that are used on check-in.

These texts are then used to associate check-in language to the correct WAKE-UP language.

```
10 Jul 14:40   +15°
WAKE UP LANGUAGE 1    8009          abcd
 backward  forward     c/i      return
```

abcd Enter the 4 characters that indicate the language.
Repeat procedure for languages 2 - 3

WAKE-UP acknowledgements

8015 - 8017
Acknowledgement to guest

This command is used to state which voice message the guest shall receive as acknowledgement of a wake-up order.

```
10 Jul 14:40   +15°
WAKE UP ORDER REF 1   8015          uuvv
 backward  forward     c/i      return
```

uuvv Enter recorded reference.
uu = 1
vv = 1 - 32
Default value = 0000 (no voice message)

Step to commands 8016 - 8017 and repeat procedure for other languages.

8018 - 8020
Time for wake-up acknowledgement

Each wake-up acknowledgement can be complemented with a time statement that corresponds to the ordered wake-up time.

```
10 Jul 14:40   +15°
WAKE-UP ORDER TIME1   8018             z
 backward  forward     c/i      return
```

z Enter required function.
Y = Time acknowledgement required.
N = Time acknowledgement not required.
Default data = Y

Equipment

If a voice message is required for wake-up acknowledgements and wake-up messages a VMU-D/VMU-HD/MFU board (ROF 157 5117) will be needed.

IMMEDIATE ANSWER

Definition

Immediate answer means that an internal call to a handsfree telephone (extension) will result in automatic answer and that the telephone will be switched into the handsfree mode.

Use

The function is used when it is to be possible to answer incoming internal calls without any action (e.g. button depression) by the called extension user.

The function requires that either a key be programmed for activation of immediate answer or that a intercom line be programmed individually for immediate answer.

With function key

If immediate answer is activated via a function key, all internal calls that are presented to **Line 1** will be handsfree.

Intercom key

If an intercom line is programmed for immediate answer, this traffic function will be presented as immediate answer.

This function can be utilised for example when one desires immediate answer on an intercom line between an executive and a secretary but does not require the function for other internal calls.

See also under INTERCOM,
document 266/155 34-ASB 150 02 Uen.

Operation

EXECUTIVE telephone

Incoming internal calls are presented in the handsfree mode on **Line 1** without any active measure on the part of the called extension user.

The call is announced by a short tone burst to both caller and called party.

Activation of immediate answer

This function requires a key to be programmed for switching to immediate answer mode.

- Press relevant key.
  As confirmation the key lamp lights and glows steadily.

Deactivation of immediate answer

- Press the key once more.
  The lamp extinguishes.

To receive transferred external calls

If an internal party wishes to transfer an external call to an extension in the immediate answer mode, the latter must first press the **2nd** and **Transfer**-key to accept the call.

This is necessary in order to prevent the transfer of external calls to extensions in the immediate answer mode when the user is absent.

Capacity

Each extension with a handsfree telephone can utilise immediate answer.

Limitations

Only internal calls, via **Line 1** and intercom line, are presented for immediate answer.

Calls on **Line 2**, external calls, calls extended by the OPERATOR and callbacks are always announced by ring signals.

If the OPERATOR calls an extension or announces an external call, immediate answer is obtained.

Calls to **Line 2** are always announced by ring signals and must be answered by pressing the key.

It is therefore recommended that **Line 2** be blocked for calls if manual answer of internal calls is to be avoided.

Permanent Immediate Answer (see command 0181) is not applicable in Hotel environment.

Programming

0181
Permanent Immediate Answer

This command defines whether or not also incoming external calls and transferred calls shall be placed automatically to an extension, that has activated Immediate Answer.
If this command is set to YES, no Immediate Answer key may be programmed.
This command is not applicable in Hotel environment.

```
10 Jul 14:40   +15°
PERM.IMMEDIATE ANSW.    0181    xxxx      z
 backward  forward     c/i       return
```

xxxx Enter extension's directory number

z Enter relevant function:
- YES Any kind of calls are presented on the respective telephone, that has activated the Immediate Answer function. Therefore no Immediate Answer key may be pressed by the user.
- NO Only internal calls are presented on the respective telephone, that has activated the Immediate Answer function. (=default value)

0301
Define key for immediate answer

To obtain immediate answer it is necessary to program a programmable key for this function.

```
10 Jul 14:40   +15°
FUNCTION OF KEY        0301 xxxx yy    zz
 backward  forward     c/i       return
```

xxxx Enter extension's directory number
yy Enter relevant key (00 - 48)
zz Enter function immediate answer = 28

0303
Program intercom key for immediate answer

This function is available only for the function "intercom"

```
10 Jul 14:40   +15°
RINGING ALTERNATIVE   0303 xxxx yy     z
 backward  forward     c/i       return
```

xxxx Enter extension's directory number
yy Enter relevant key (00 - 48)
z Enter ring type = 5

NOTE: The system accepts digit 5 for other traffic functions also, for example supervision and trunk, but then supplies the ring function as if digit 1 had been programmed.

Individual programming

The function can also be defined via individual programming.

See document FACILITY DESCRIPTION (155 34-ASB 150 02 Uen).

Equipment

Telephone with handsfree function.

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
SEA/TB/MP T.Preißner	SEA/TB/X	261/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved: SEA/TB/MP	Kontr/Checked	Datum/Date: 98-01-27	Rev: A
		Database reference: 261.fm	Tillhör/Referens-File/Reference: ASB 150 02

INCOMING CALLS VIA LINE 1 OR LINE 2

Definition

Call to a system telephone's directory number from another extension or a public network subscriber.

Use

ECONOMY -, STANDARD - and EXECUTIVE telephones have three keys that are coupled to the telephone's directory number.

Line 1 Incoming/outgoing calls

Line 2 Incoming/outgoing calls
The line can be blocked for incoming traffic

Inquiry Outgoing traffic

All calls to the extension's directory number will be indicated on the system telephone's **Line 1** or **Line 2**.

Inquiry is utilised solely for outgoing traffic.

Operation

ECONOMY -, STANDARD - and EXECUTIVE Telephones

Incoming call

If the telephone is free on both **Line 1** and **Line 2** an incoming call will be presented on **Line 1**.

The associated lamp lights and flashes rapidly.

If the telephone is in the idle state the extension will be rung with repeated internal or external ring signals unless otherwise programmed.

On telephones with display, the caller's number and name will be shown.

For internal calls for example the following will be shown:

EXECUTIVE telephone

```
10 Jul 14:40   +15°
JOHNSON ANDREW            203  CALLING
 directory               redial      prog
```

STANDARD telephone

```
10 Jul 14:40   +15°
JOHNSON A    203  C
```

For external calls for example the following will be shown:

EXECUTIVE telephone

```
10 Jul 14:40   +15°
EXTERNAL                  702  CALLING
directory               redial      prog
```

STANDARD telephone

```
10 Jul 14:40   +15°
EXTERNAL      702  C
```

Answer in handset mode

Calls in handset mode on **Line 1** can always be answered as follows:

- Lift handset

Calls to **Line 2** are answered as follows:

- Press key **Line 2.**
  Associated lamp flashes to confirm connection

Answer in handsfree mode

Calls in handsfree mode are answered as follows:

- Press key for **Line 1** or **Line 2**.
  Associated lamp flashes to confirm connection.
  On/Off lamp lights and glows steadily

Calls to **Line 1** can also be answered as follows:

- Press **On/Off** key

A telephone with display shows for example:

EXECUTIVE telephone

```
10 Jul 14:40   +15°
JOHNSON ANDREW            203  SPEECH
```

STANDARD telephone

```
10 Jul 14:40   +15°
JOHNSON A     203  S
```

Speech state

On answer, the ring signals cease and contact is obtained with the caller.

Disconnection of call in handset mode

- Replace handset.
  Line 1 - or **Line 2** lamp extinguishes

An ongoing call can always be disconnected by pressing the **Clear** key.

Disconnection of call in handsfree mode

- Press **On/Off** key or **Clear** key.
  Line 1 -/**Line 2** lamp extinguishes as does **On/Off** lamp.

Busy on Line 2 / Free on 2nd access

A separate key has to be programmed for this purpose.

By default the second line is free is on the system telephones. Via system programming you can change the value to the customer needs.

System programming is set to "Busy on Line 2" (=default value):

Line 2 can be blocked for calls as follows:

- Press programmed key "Busy on Line 2".
  Associated lamp lights and glows steadily

Line 2 can be reopened as follows:

- Press programmed key "Busy on Line 2".
  Associated lamp extinguishes

System programming is set to "Free on 2nd access":

Line 2 can be unblocked for calls as follows:

- Press programmed key "Free on Line2".
  Associated lamp lights and glows steadily

Line 2 can be reblocked as follows:

- Press programmed key "Free on Line2".
  Associated lamp extinguishes

BASIC - and ANALOGUE telephones

Calls

A call is presented by repeated internal or external ring signals.

Answer

To answer the call:

- Lift handset.
  Ring signal ceases and speech connection is established.

Disconnection

To terminate ongoing call:

- Replace handset

Capacity

Only one call at a time may initiate ring signals to the extension's directory number.

Calls can be signalled on **Line 2** if **Line 1** is busy with an ongoing call.

Limitations

The following prerequisites apply for calls to **Line 1** and **Line 2**:

- *Both **Line 1** and **Line 2** are free when a call arrives.*
  The call is always presented on **Line 1**,
  Repeated ring signal.
- ***Line 1** is busy and **Line 2** free.*
  The call is presented on **Line 2**.
  One muted ring burst only.
- ***Line 1** is busy and **Line 2** is blocked for calls.*
  The caller receives busy tone.
- *If an unanswered call exists to **Line 1** or **Line 2***
  No new call can be presented.
  The caller receives busy tone.
- For a second call to be presented on **Line 1** or **Line 2 Inquiry** must be free also. This is because the possibility shall always exist to transfer one of the two calls.

Programming

2080
Free on 2nd access Y/N ?

This command states if the system telephones have "Busy on Line 2" or "Free on 2nd access" on Line 2.

default value YES (access on Line 2)

0301
Blocking Line 2 / Free on 2nd access

Extension users with system telephones who wish to have "Busy on Line 2" / "Free on Line 2" need to use a programmable key for this purpose.

```
10 Jul 14:40   +15°
FUNCTION OF KEY       0301 xxxx yy    zz
 backward  forward     c/i      return
```

xxxx Enter extension' s directory number

yy Enter relevant key (00 - 48)

zz Enter code for un/blocking key = 26

It is also possible to assign a key by means of individual programming.

See chapter INDIVIDUAL PROGRAMMING in document FACILITY DESCRIPTION, 155 34-ASB 150 02 Uen.

3038
Programm busy line ?

This command states which ACOS goup is permitted to programm the facility "Busy Line 2".

default value YES

0101
Facility COS

This command states which facility the extension belongs to. The facility category controls the number of fac8ilities the extension has access to.
Extensions (and trunk lines) can be devided into 16 different facility categories.

valid falue 0 - 15
default value 0

Equipment

None.

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
SEA/TB/MP T.Preißner	SEA/TB/X	262/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved	Kontr/Checked	Datum/Date / Rev	Tillhör/Referens-File/Reference
SEA/TB/MP		98-01-27 / A	ASB 150 02
		Database reference	
		262.fm	

INCOMING EXTERNAL CALLS

Definition

Incoming external traffic denotes traffic from the public exchange or other exchange to an extension via a trunk.

Use

Each incoming trunk can be assigned an optional answering position.

This enables the system to be programmed so that incoming traffic is handled in the optimum manner.

It is essential to consider how incoming traffic is to be handled so that the system can be programmed to function at its most effective.

The various answer alternatives are described below. It is possible to select one or an optional combination of answer alternatives.

OPERATOR traffic

If the incoming trunks are to be answered (served) by one or more OPERATORs, the trunks are to be assigned the answering position that corresponds to the directory number of the OPERATOR queue.

Incoming external calls will then be directed to this directory number.

If there is no free OPERATOR, the call will be placed in the OPERATOR queue.

For OPERATOR traffic it is advisable to also program the alternative answering position for the trunk with the directory number of the OPERATOR queue so that unanswered calls are directed back to the OPERATOR who extended the call.

See also OPERATOR,
document 380/155 34-ASB 150 02 Uen.

Private trunk line

Each individual trunk can be assigned an individual answering position.

An incoming call will then call the programmed directory number.

This can be utilised if, for example, a certain trunk is a private line, that is by dialling a certain public network directory number the call can go directly to the identified extension. If busy tone is received, the call can be either camped on or directed to an alternative answering position.

Common call pick-up function

Each individual trunk that is to call the group is programmed with a fictive directory number as answering position.

In the event of several simultaneous calls these will be camped on to the answering position.

Those extensions that are members of the group program a key for supervision by which calls to the answering position can be picked up.

See also under "CALL PICK-UP - COMMON",
document 142/155 34-ASB 150 02 Uen.

PBX- (extension)-group as answering position

In this case the trunk is programmed so that the directory number of the PBX-group is inserted as normal answering position.

It is advisable to program the alternative answering position for the same PBX-group so that "abandoned" calls are directed back to the group.

See also under "GROUP (PBX)-HUNTING",
document 220/155 34-ASB 150 02 Uen.

Key-system

Using a key-system it is possible to answer calls to a certain trunk from any extension.

On each system telephone on which the trunk is represented the associated lamp will flash when an incoming call exists.

On each telephone that is to be a member of the group it is necessary to program an external line key for each trunk that is to be answered.

In this case the trunk is not assigned an answering position.

See also under "KEY-SYSTEM FUNCTION", document 300/155 34-ASB 150 02 Uen.

ACD-group as answering position

If the trunk is to be included in an ACD- (Automatic Call Distribution)-route, the directory number of the ACD-group is to be programmed as answering position.

See also ACD-GROUPS, document 105/155 34-ASB 150 02 Uen.

Direct InDialling (DID)

For direct indialling trunks the customary answering position shall not normally be programmed.

The directory number that is to handle redirected calls in the event of no reply, e.g. the OPERATOR queue is stated as alternative answering position.

See also DIRECT INDIALLING (DID), document 162/155 34-ASB 150 02 Uen.

Operation

See under relevant facility description.

Capacity

The number of incoming trunks is limited by the number of voice (speech) channels (60).

Limitations

Incoming calls on trunks are always presented on programmed external line keys even if an individual answering position has been programmed.

New incoming calls are directed to an individual answering position if one has been programmed. If no individual answering position exists, the trunk call is directed to the alternative answering position.

Special limitations for an ISDN trunk

Most of the features described under the item USE are related to anlagoue trunks or digital CAS lines without DID.
This will also work in conjunction with an ISDN-trunkline without subscribtion of the supplementary service DID.

In case of outgoing traffic it is possible in ASB 150 02 to create groups of B-channels for defined purposes (e.g. tenant groups or ACD groups) but it depends on the national network operator if this is also supported. In case of incoming traffic it is not possible to assign B-channels to specific groups.

Programming

1101 - 1104
Programming of answering positions

On system start all trunks are directed to directory number 200.

Four different answering positions can be programmed for each trunk:

- Answering position, day = 1101
- Answering position, night = 1102
- Alternative answering position, day = 1103
- Alternative answering position, night = 1104

A call is directed to an alternative answering position when the normal answering position does not answer within a predetermined time.

```
10 Jul 14:40   +15°
ANSWERING POS DAY     1101 xxxx     zzzz
 backward  forward     c/i      return
```

xxxx	Enter directory number of relevant trunk
zzzz	Enter directory number of relevant answering position. Default data = 200

Step to commands 1102 - 1104 and repeat above procedure.

1109
Common voice announcement interruptable

This command states weather the alerting on the answering/reroute position shall start at the same time as the common trunk announcement or not.

valid data	NO Common announcement is not interruptable (default data)
	YES Common announcement is interruptable
NOTE:	If this command is set to YES and the called party answers the call, the common voice announcement will be interrupted:

Equipment

None.

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
SEA/EBBMP Pfleger H.	SEA/EBBX/E	263/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved / Kontr/Checked		Datum/Date / Rev	Tillhör/Referens-File/Reference
SEA/EBBMP		99-07-15 C	ASB 150 02
		Database reference	
		263.fm	

INFORMATION

Definition

Information means that a caller receives direct information concerning the called extension user's absence.

Information concerning absence is entered by the respective extension user.

Information is divided into:

a information

- Preprogrammed information texts that can be complemented with time of return/date of return.
- Voice information that can be freely recorded by the user.
- Text information that can be freely composed by the user (only EXECUTIVE Telephone and OPERATOR's Console).

b personal mailbox greeting

- Voice information that can be freely recorded by user. For further information see Mailbox system, document 340/155 34-ASB 150 02 Uen.

Use

Information can be used to inform the caller of the reason for the absence and to give him the possibility to leave a message in the mailbox system.

The great advantage of the information facility is that the caller receives directly the reason for absence without being diverted to a secretary.

It is, however, also possible to combine information with supervision.

In this case, the call is diverted to a secretary who then, on her display, can obtain information concerning the reason for the diversion of the call.

Information is normally supplied to internal callers, but the system can also be programmed to enable external callers to receive voice information.

In conjunction with the integrated mailbox functionality, voice information is used for personal mailbox greetings. Depending on the diversion to an individual mailbox the following voice information will be supported:

- personal "diversion on busy" greeting
- personal "diversion on no reply" greeting
- personal "diversion direct/follow me" greeting

Extensions equipped with an EXECUTIVE Telephone or OPERATOR Console and possessing the requisite categorisation can also enter information for others. This function is of particular importance if, for example, someone calls the OPERATOR to report him/herself ill.

Preprogrammed information is supplied as text information if the caller has a display telephone, otherwise it is supplied as voice information.

Voice information is assembled automatically and comprises recorded text as well as date or time of day.

Operation

In the description below, the key **Info** corresponds to the procedure **2nd** and **Info** on ECONOMYplus -, STANDARD and EXECUTIVE Telephones (and **P**-key on the old BASIC Telephone DBC 199).

Analogue, BASIC, ECONOMY and STANDARD Telephone

Activate information

When Info has been activated, the Message lamp will be on, if there are no unanswered messages.

All telephone types can enter:

- Preprogrammed information
- Voice information

Preprogrammed information

- Press **Info**-key or dial *** 2 3 *** .
  The associated lamp flickers to confirm connection.
- Select respective text:
  1 Time of return, back HHMM
  2 Date of return, back MMDD
  3 Lunch, back HHMM
  4 Meeting, back HHMM
  5 Vacation, back MMDD
  6 Illness, back MMDD
  7 back HHMM
- Add indication of time of return/day of return, if so required.
  Time has the format HHMM.
  Date has either the formats DDMM or MMDD.
- Press #
- **Info**-lamp is on and glows steadily.

The time information is programmed in intervals of 5 minutes. If the user programs an arrival time which is between two 5-minutes steps (e.g 8h12), the time will be rounded up to the next 5-minutes step (it will be stored as 8h15).

Voice information

- Press **Info**-key or dial *** 2 3 *** .
  The associated lamp flashes to confirm the connection
- Press **9**
- Record respective information
- Press #
- **Info**-lamp is on

Play back the recorded information before it is stored

- Press *****

If you are dissatisfied with the recording, it is possible to record a new.

- Press **9** and repeat the recording sequence.

Erase the recorded information

There are two possibilities to erase a stored information:

1 Telephone instruments equipped with an Info-key:

- Press **Info**-key.
  Associated lamp flickers to confirm connection.
- Press **0** and **#.**
  Info-lamp extinguishes.

2 Telephone instruments without an Info-key:

- Press # **23** # .
  Info-lamp extinguishes.

To deactivate stored information for later use

A recorded info can be saved as follows:

- Press **Info**-key followed by # or press *** 23 *** # .
- **Info**-lamp extinguishes.

To activate stored information

The saved information (message) can be played as follows:

- Press **Info**-key followed by # or press *** 23 *** # .
- **Info**-lamp is on.

Activate/deactivate/erase personal mailbox greeting

No-display telephones can enter the voice information only via the mailbox system.

For further information see Mailbox system, document 340/155 34-ASB 150 02 Uen.

Call to extension that has provided information

If the called extension has supplied a preprogrammed information or voice information, the extension will hear a short tone burst, whereafter the information will be played twice. Then the connection is released.

EXECUTIVE Telephone and Operator Console

These telephone types provide guide texts on the display. It is also possible to enter information/personal mailbox greeting on behalf of another extension.

To enter information/personal mailbox greeting

- Press **Info** key.
  The associated lamp flashes to confirm connection.

The display shows:

```
10 Jul 14:40   +15°
ABSENCE INFORMATION FOR:            200
            leave            change-no.
```

leave = Provide (leave) information for own extension.

change-no. = Provide information for another extension, see below.

- Press **leave**

The display shows:

```
10 Jul 14:40   +15°
ABSENCE INFORMATION FOR:            200
absence  greeting
```

absence = Provide (leave) predefined, voice or text information.

greeting = Provide personal mailbox greeting depending on the diversion case of the individual mailbox.

Provide information for stated extension

- Press **absence**

The display shows:

```
10 Jul 14:40   +15°
ABSENCE INFORMATION FOR:            200
           pre-text   voice   free-text
```

Select the respective information type

- **pre-text** =
  Scroll through the existing preprogrammed texts:
  1 Time of return, back HHMM
  2 Date of return, back MMDD
  3 Lunch, back HHMM
  4 Meeting, back HHMM
  5 Vacation, back MMDD
  6 Illness, back MMDD
  7 back HHMM

voice = Record your own voice information

free-text = Create your own text information

Preprogrammed information

Select a digit **1 - 7** or scroll with **pre-text** until the desired text is displayed.

Example of information text.

```
10 Jul 14:40   +15°
1 TIME OF RETURN    BACK AT        HHMM
 activate next-info            return
```

- Complement with date or time of day, if so required. Indications to the right indicate the type of information that is to be entered:
  HHMM = Hour and minute

  Remember that minute information entered by you will be recognised from the system using the 5-minutes steps' logic.

The following 2 kinds of format are supported:
MMDD = Month and Day
and
DDMM = Day and Month

- Press menu key "**activate**"
- **Info** lamp glows steadily
- The display shows entered information

```
10 Jul 14:40   +15°
INFORMATION STORED
```

After 8 seconds the display changes to:

```
10 Jul 14:40   +15°
1 TIME OF RETURN    BACK AT          1630
 directory              redial       prog
```

Text information

- Press **free-text**

The display now shows:

```
10 Jul 14:40   +15°
_
 activate
```

- Enter relevant text (maximum 40 characters)
  For entering texts, see TEXT MODE, document 483/155 34-ASB 150 02 Uen.
- Press menu key "**activate**"
- The display shows entered information
- **Info** lamp glows steadily

Voice information

- Press **voice**
- Short tone burst is heard
- Record relevant information
- Press menu key "**activate**"

During the recording the following text is displayed.

The digits "011" on the right side indicate the remaining recording time in seconds.

```
10 Jul 14:40   +15°
RECORDING                            011
 record   play-back   pause   activate
```

record = Press key if new recording is to be made

play-back = Press key if recorded information is to be played back before **activate** is pressed.

pause = Press key if you wish to take a pause during recording or play-back.
Press key again to resume recording

activate = Press key to activate function.

Provide personal mailbox greeting for stated extension

- Press **greeting**

The display shows:

```
10 Jul 14:40   +15°
MAILBOX GREETING FOR:            200
  busy     noreply   direct
```

Voice information

- Press **busy/noreply/direct**
- Short tone burst is heard
- Record relevant information
- Press menu key "**activate**"

During the recording the following text is displayed.

The digits "011" on the right side indicate the remaining recording time in seconds.

```
10 Jul 14:40   +15˚
RECORDING                          011
 record   play-back   pause   activate
```

record = Press key if new recording is to be made

play-back = Press key if recorded information is to be played back before **activate** is pressed.

pause = Press key if you wish to take a pause during recording or play-back.
Press key again to resume recording

activate = Press key to activate function.

Enter information on behalf of another extension user

It is possible to enter information on behalf of an extension user who is unable to do so her-/himself, e.g. due to illness.

To do this the extension must have a category that gives the authorisation.

See under "Programming" below.

The display shows:

```
10 Jul 14:40   +15˚
ABSENCE INFORMATION FOR:           200
activate                     chnge-no.
```

- Press = **chnge-no**
- Enter directory number of the person to whom information applies
- Press menu key "**activate**"

The information is then entered in the same manner as for own information.

Erase inserted information/personal mailbox greeting

An inserted information is erased as follows:

- Press **Info**

The display shows:

```
10 Jul 14:40   +15˚
ABSENCE INFORMATION FOR:           200
  erase     leave       off   chnge-no.
```

Press **erase**.
The display shows:

```
10 Jul 14:40   +15˚
ABSENCE INFORMATION FOR:           200
absence     busy     noreply     direct
```

Press **absence/busy/noreply/direct**
The display shows:

```
10 Jul 14:40   +15˚
INFORMATION ERASED
```

After about 8 seconds, the display shows idle.
Info-lamp extinguishes

Deactivate & save information

A created info can be saved and activated later.

```
10 Jul 14:40   +15°
ABSENCE INFORMATION FOR:              200
  erase     leave       off   chnge-no.
```

- Press **off**

The display shows:

```
10 Jul 14:40   +15°
INFORMATION PASSIVE
```

NOTE: If new information is created, previously stored information will be erased.

To activate stored information

- Press **Info**

The display shows:

```
10 Jul 14:40   +15°
ABSENCE INFORMATION FOR               200
  erase     leave        on    chnge-no.
```

Press **on**

The display shows:

```
10 Jul 14:40   +15°
INFORMATION ACTIVE
```

Internal call to extension that has supplied information

The display shows:

```
10 Jul  14:40  +15°
JOHNSON ANDREW                 203  INFO
```

After a short moment a new short tone burst is heard, whereupon the display shows whether the called party has supplied preprogrammed information or text information:

```
10 Jul 14:40   +15°
5 VACATION  BACK                    May 12
```

If the called party has supplied voice information, the display will not be altered, but voice information is supplied.

External call to extension that has supplied information

External callers can obtain voice information subject to the following prerequisites:

- Trunk is programmed for external information
- The called extension has supplied voice or pre-programmed information.

A voice message is repeated twice, whereafter the trunk is disconnected.

An external call is "answered" after a programmable delay time. During the waiting time the external caller hears ringing tone.

See DELAYED AUTOMATIC ANSWER, document 160/155 34-ASB 150 02 Uen.

Internal/external call to a personal mailbox greeting

In case of diversion to a individual mailbox, the diversion reason is checked and the respective personal mailbox greeting is played. If no personal mailbox greeting has been recorded for that diversion

case, the conventional voice information will be played. If there is neither a personal mailbox greeting nor a conventional voice information available, the general mailbox greeting will be played.

For further information see Mailbox system, document 340/155 34-ASB 150 02 Uen.

Capacity

Each extension may insert **one** absence information.

As regards voice information, the total number of concurrent messages is restricted by the available time on the voice memory board.

Limitations

External calls are given information only if so programmed and only in the case of voice or preprogrammed information.

Otherwise the call will be directed either to a programmed trunk reroute position or, if none exists, the extension will be rung as if no absence information had been inserted.

The directory number *23* is not applicable for recording/changing a personal mailbox greeting.

Programming

3018 - 3021
A number of parameters can be programmed for the information facility

Facility categories for information

For each extension a facility category shall be stated that contains the desired information facilities.
See also CATEGORISATION, document 149/155 34-ASB 150 02 Uen.

The following functions are affected:

3018
Enter information for others

This command is used to state which Classes of Service (=COS) are permitted to provide information on behalf of others

Default data = N

3019
Enter voice information

This command is used to state which A-categories are permitted to provide voice information.

Default data = Y.

3020
Enter text information

This command is used to state which A-categories are permitted to provide text information.

Default data = Y.

3021
Enter predefined information

This command is used to state which A-categories are permitted to provide predefined information.

Default data = Y.

0101
Facility category for extension

The extension is assigned a facility category (COS = Class Of Service) containing the desired facilities.

```
10 Jul 14:40   +15°
FACILITY COS          0101 xxxx       zz
 backward  forward     c/i      return
```

xxxx Enter extension's directory number

zz Enter relevant facility category (0 - 15)

4602
Voice information on VMU-D/VMU-HD/MFU board

If several VMU-D/VMU-HD/MFU boards exist, it is possible to prevent voice information from being stored on a certain board.

```
10 Jul 14:40   +15°
REC INFO ALLOWED ?    4602 xxyy        z
 backward  forward     c/i      return
```

xxyy Enter board position 01 - 63 and 00

z Enter relevant function
Y = Voice information permitted on board
N = Voice information not permitted on board.

4302
Max. time for voice information

Upon start the time for voice information is limited to 12 seconds.

If duration be increased/reduced, this can be entered.

```
10 Jul 14:40   +15°
MAX TIME SPCH INFO    4302           zzz
 backward  forward     c/i      return
```

zzz Enter desired time 0 - 255 seconds

4306
Speech quality for voice information

It is possible to program a higher speech quality on the voice memory board, if so required.

```
10 Jul 14:40   +15°
HIGH INFO QUALITY ?   4306            z
 backward  forward     c/i      return
```

z — Enter relevant function:
Y = High speech quality.
N = Normal speech quality (default data)

4501
Alteration of information texts

If information texts other than the preprogrammed ones are desired, these can be altered.

```
10 Jul 14:40   +15°
TEXT 1-35 CHARACTERS  4501 y          >
 backward  forward     c/i      return
```

y — Enter which programmed information is to be altered (1 - 7)

- Press **Enter**
- Enter desired text (max. 35 characters)
- To erase existing text press **-** -key

The default texts are shown below.
Text 7 has no default wording.

```
1 TIME OF RETURN     BACK             HHMM
```

```
10 Jul 14:40   +15°
2 DATE OF RETURN     BACK             MMDD
```

```
3 LUNCH              BACK             HHMM
```

```
4 MEETING            BACK             HHMM
```

```
5 VACATION           BACK             MMDD
```

```
6 ILLNESS            BACK             MMDD
```

```
7                                     HHMM
```

4502
Input field in information text

Each text can be completed with an input field (time, date).

```
10 Jul 14:40   +15°
MEANING OF DIGITS     4502    y        z
 backward  forward     c/i      return
```

y — Enter which text information is to be altered (1 - 7)

z — State type of field:
1 = Date MMDD (month, day)
2 = Time of day HHMM (hour, minute)
3 = date DDMM (day, month)

1022
Information to external callers

Each trunk can be programmed so that external callers receive voice information.

```
10 Jul 14:40   +15°
VOICEINFO TO TRUNK    1022 xxxx        z
 backward  forward     c/i      return
```

xxxx — Enter trunk's directory number

z — Enter relevant function:
Y = Information shall be supplied.
N = Information shall not be supplied.
(default data)

Recording voice messages

If the system is equipped with a voice memory, the user may record the following parameters.

Procedure for recording see VOICE MESSAGE, document 522/155 34-ASB 150 02 Uen.

The following commands are used for the recording of texts concerning information.

The following commands are only accessible via the system telephone:

4402
Preprogrammed texts 1 - 7

```
10 Jul 14:40   +15°
INFORMATION 1-7      4402              >
 backward  forward               return
```

4403
Month 1 - 12

```
10 Jul 14:40   +15°
MONTH 1-12           4403              >
 backward  forward               return
```

4404
Day 1 - 31

```
10 Jul 14:40   +15°
DATES 1-31           4404              >
 backward  forward               return
```

4405
Time of day 0 - 23

```
10 Jul 14:40   +15°
HOURS 0-23           4405              >
 backward  forward               return
```

4406
Minutes 00, 05*, 10*, 15, 20*, 25*, 30, 35*, 40*, 45, 50*, 55*.

```
10 Jul 14:40   +15°
5 MIN. 0-11          4406              >
 backward  forward               return
```

* NOTE: Each time you update an ASB 15002 system of an older release than R6 to the latest software release, do not forget to make the additional recordings for the above-marked 5-minutes intervals.

Equipment

To be able to receive voice information, the system must be equipped with one or more VMU-D/VMU-HD/MFU boards.

Personal mailbox greeting is protected by the FECU. Without FECU the menu/voice will lead to an error picture/error voice prompt and a FECU warning is generated.

For detailed description see Facility Description - General, document 155 34-ASB 150 02 Uen.

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
SEA/TB/MP T.Preißner	SEA/TB/XE	264/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved: SEA/TB/MP	Kontr/Checked	Datum/Date: 97-10-31	Rev: B
		Tillhör/Referens-File/Reference: ASB 150 02	
		Database reference: 264.fm	

INQUIRY

Definition

Inquiry means, during an ongoing call, the possibility to initiate a new call. The ongoing call will be parked automatically.

Use

Inquiry is used when, for example, one wishes to obtain information from a third party during an ongoing call.

When the inquiry call ends, the inquirer can disconnect this call and revert to her/his original call partner.

The third party (inquiree) can remain parked when the caller returns to the original party, thereby allowing the caller to switch between the two calls.

See also REFER BACK,
document 441/155 34-ASB 150 02 Uen.

When an inquiry call has been established the original call partner can be transferred to the inquiree.

See also TRANSFER,
document 485/155 34-ASB 150 02 Uen.

If the inquiree is busy, the parked call can be camped on to the inquiree.

See also CAMP ON,
document 146 - 148/155 34-ASB 150 02 Uen.

Inquiry is also possible to extensions in a superior system or subscribers in the public network.

See also SUBSYSTEM,
document 462/155 34-ASB 150 02 Uen.

Operation

Digital Telephones

Initiation of inquiry

An inquiry is initiated as follows:

- Press free traffic function key (**Line 1**, **Line 2 ***, **Inquiry**, **External line key** etc.)
- Ongoing call is automatically parked individually. Associated lamp for parked call's traffic function key starts to flash slowly.
  If system telephone has a display, this goes blank.
  From these telephones the inquiry call is to be regarded as a new call.
  The lamp for the occupied traffic function flashes to confirm connection and dial tone is heard.
  The extension user can now dial the desired directory number.

Reversion

Reversion to the parked party is achieved as follows:

- Press traffic function key for parked party.
  Lamp flashes to confirm connection.
  If inquiree remains parked lamp will flash slowly.
  If inquiree replaces handset lamp will extinguish

Inquiry via name selection key

- Press name selection key.
  Ongoing call will be parked automatically at same time as one of the free traffic functions, i.e. **Line 1**, **Line 2 *** or **Inquiry** will be seized automatically.
  Number stored on name selection key will now be transmitted on seized traffic function.

* not available on the BASIC Telephone

NOTE: If, during an ongoing call, the user wishes to dial an individual abbreviated number, this will be sent via the seized traffic function.To be able to use abbreviated numbers for inquiry calls manual seizure of a new traffic function is required.

Analogue Telephones

Initiation of inquiry

Inquiry is initiated as follows:

- Press **R** (Recall)-button
  (Digit "**1**" is dialled on analogue rotary dial telephones without **R**-button).
  On initiation ongoing call is parked and new dial tone is obtained
- Inquirer then dials relevant directory number

Reversion

Reversion to the parked party is achieved as follows:

- Press **R**-button
  (digit "**1**" for rotary dial telephones).
  If it is desired to disconnect the inquiree, the inquirer presses the **R**-button and **1**, and to retain the inquiree **R**-button and **2**

If only the **R**-button is pressed, reconnection of the parked party will take place automatically after three seconds.

In the event of uncompleted inquiry from an analogue rotary dial telephone, the user must replace the handset and the extension will be rerung by the parked party.

Capacity

The number of simultaneously ongoing inquiry calls is limited only by the number of traffic functions on the system telephones.

On an ANALOGUE Telephone only one inquiry call at a time can be handled.

Limitations

Inquiry can only be initiated during an ongoing answered call.

If a new traffic function key is pressed before answer, the original call will be disconnected.

For initiation of inquiry calls the same prerequisites apply as for normal incoming internal or external calls.

Programming

None.

Equipment

None.

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
SEA/EBBMP M. Plattner	SEA/EBBX/E	265/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved / Kontr/Checked		Datum/Date / Rev	Tillhör/Referens-File/Reference
SEA/EBBMP		99-07-15 C	ASB 150 02
		Database reference	
		265.fm	

INTEGRATED CORDLESS

Definition

The Integrated Cordless is based on Ericsson's Business Cordless (DECT) system.
Integrated Cordless, the commercial name being BusinessPhone Cordless, means that in addition to wired telephones portables can be connected to the system.

Use

The Integrated Cordless covers not only a "physical integration" of Ericsson's Business Cordless for cost reduction, but also a "logical integration" for increased functionality with ASB 150 02.
That means apart from all the benefits of DCT 1800 (multi-user - multi-cell architecture with full coverage, roaming, seamless handover,...),Integrated Cordless provides a great number of additional benefits.

Operation

General

The Integrated Cordless comprises three major components:

- IC-CU which provides control, roaming and interfacing of the cordless to ASB 150 02, A-protocol.
- IC-CU 2 which provides the GAP (=Generic Access Profile) standard, control, roaming and interfacing of the cordless to ASB 150 02, digital speech transcoding, 8 speech channels, feeding and controlling up to 4 Base stations.
- IC-LU which provides digital speech transcoding, 8 speech channels, feeding and controlling up to 8 Base stations.

The Integrated Cordless functionality within the ASB 150 02 system supports the DCT 1800 standard base station and standard- / GAP- portables as well as all other standard add-on equipment (e.g.: chargers, headset,...).

3 different ways to use the cordless telephone:

1 Users with "only" a portable telephone.
Users without a permanent desk may use their portables with no need for additional wired phones.

2 Users with a wired phone (desktop) and an independent portable
Some users need mobile phones only on certain occasions so these users will have a wired phone on their desk and take a portable phone from a common pool whenever they need it.
For this application calls to the wired phone of a user will be diverted to the portable phone.

3 Users with a wired (desktop) and a portable phone in a Tandem configuration are treated as one logical unit.
The Tandem configuration enhances the communication for users that have a wired phone on their desk and need to be mobile within the company by using their own portables. Both telephones have the same directory number but independent classes of service.

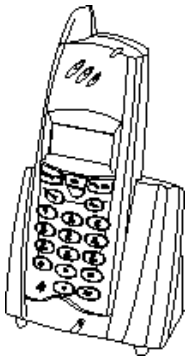
In principle, the TANDEM unit works as follows:

- for incoming calls, both telephones will be treated as 1 single extension.
- for outgoing calls, both telephones will be treated as 2 seperate extensions.

Note: The TANDEM unit is not only applicable with a cordless phone and a wired one, it is also possible to set up a unit between two wired telephones (e.g.: second telephone for the executive, second guest room telephone).
For more information, see "TANDEM configuration", document 480 / 155 34 - ASB 150 02 Uen

The Ericsson portable telephones

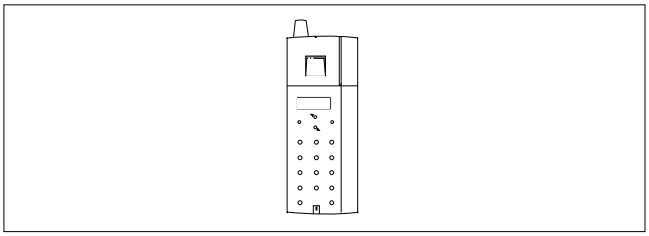
Portable Telephone, DT 288



- Ericsson look and feel (Yes/No/Clear/Up/Down)
- 2 line display plus icons
- Menu driven user interface
- 100 entries in telephone book
- GAP standard
- including charger for desk stand and wall mounting
- Personalized settings: key click, back light,...

Portable Telephone, DT 368

- Small, lightweight with standard key pad
- 6 function keys, 10 number memory
- 10 hours speech time and 50 hours stand-by
- LCD alphanumeric/symbol display
- menu keys & time and date display
- Alphanumeric number memory for up to 1,000 names and numbers
- CTR22 (GAP) compliant
- WhoCalled function & LastDialled list



DECT Generic Access Profile

DECT is a general radio access technology for short range wireless telecommunications. It is a high capacity, pico-cellular digital technology for cell radio depending on application and environment.
The objective of the Digital Enhanced Cordless Telecommunications (DECT) standard is to use digital radio technology to improve the performance of wireless voice communications.
In order to enhance standardisation for specific DECT applications, a number of profiles have been developed.
A profile is a protocol specification, which is used in conjunction with the DECT air interface. A profile defines a selection of messages and procedures from the DECT standard, and gives an unique description of the DECT air interface for specified service(s) and application(s).
GAP is the most important of all access profiles. It assures the basic interoperability of cordless phones and fixed parts (radio exchange and base stations) from different suppliers. GAP is also essential for public access networks, as customers will be able to use the same cordless phones at home, in the office, and in the street.
The Generic Access Profile (ETS 300 444) specifies the minimum functionality that is required in order to support basic telephony services. The functionality of the profile consists of the minimum mandatory requirements that allow a 3,1 kHz teleservice connection to be established, maintained and released between a fixed part and a cordless phone with the appropriate access rights, irrespective of whether the fixed part provides residential, business or public access services.
Basic interoperability for speech applications is defined in GAP. In practice this implies that customers have the freedom to purchase systems and cordless phones separately. They can pick the best featured system and combine it with the cordless phones with the best functionality, provided the functionality is included in GAP.
In addition, GAP requires that multiple subscriptions are supported by cordless phones. Multiple subscriptions allow the use of one single handset in multiple environments and systems.

Capacity

The ASB 150 02 integrated cordless handles a max. of:

Generic Access Profile:
- 60 base stations (7 IC-LUs + 1 IC-CU2) and
- 210 cordless phones.

A-protocol:
- 56 base stations (7 IC-LU's) and
- 108 cordless phones.

The total capacity of wired and cordless phones depends on the max. capacity of the ASB 150 02 system, it does not, however, exceed 288 extensions.
Max 1 IC-CU_ and 7 IC-LUs per system may be installed. The number of necessary IC-LUs depends on the required number of base stations and speech channels (see also chapter "Equipment" in this document).

Commercial point of view

From the commercial point of view, the number of cordless phones is determined by the FECU (=Feature Enabling Control Unit), a plug for the IC-CU_. For basic configurations with up to 8 portables, no FECU on the IC-CU_ is required. For larger configurations, FECUs have to be plugged on the IC-CU_. The following steps are available (number of portables):

16, 24, 32, 48, 64, 108 and 210 (GAP only) portables.

Using the DECT GAP-protocol, the system FECU for the CPU-D4 is mandatory. Without FECU on the CPU-D4 only outgoing calls are allowed !

Limitations

BusinessPhone 50

Due to the limited number of available board positions with BusinessPhone 50 (5 slots) and backplane restrictions, only the IC-CU2 board is allowed to be installed. IC-CU or IC-LU boards will not be supported !

Traffic limitations

An IC-LU can provide up to eight base stations with a maximum of eight PCM channels. One base station can handle up to 8 speech channels. They can be connected to the PCM channels on the IC-LU. All base stations connected on the same IC-LU have to share the PCM channels. This can lead to a busy group because of Cordless traffic congestion. It is possible to use additional IC-LU boards to expand the PCM channel of an overloaded IC-LU. They can share their PCM resources to be able to regulate traffic peaks.

Programming

Operation and maintanance (O&M)

Even though the cordless system is logically integrated, there are two different systems concerning installation and O&M. Both systems have to be configured and maintained seperatly.

- BusinessPhone 250 via RASC via V.24 interface on CPU_ , AUX_ or via V.22 modem on CPU-D4.
- BusinessPhone Cordless via Cordless System Manager SW via V.24 interface on IC-CU_, CPU-D4 or via V.22 modem on CPU-D4.

The portable telephone numbers stored in the IC-CU_ and in the CPU_ board have to correspond to each other:

e.g.:	Number in RASC (command: 5630)	Number in DCT
Master:	216	
Slave:	234	216

Important note:

Be sure to always create/change/delete the Slave directory number in RASC AND in the Cordless System Manager, especially when reconfiguring ASB 150 02 !

Commands via RASC

See document TANDEM CONFIGURATION, 480 / 155 34 - ASB 150 02 Uen

Following commands have to be programmed for installing Integrated Cordless:

2061 - 2065
Priority link for synchronisation

These commands define which link will have the first /second /third /fourth /fifth priority to be master.

The IC-CU_ has to be included in one of these commands:

- ISDN trunks are connected to ASB 150 02 => state the IC-CU_ board for the last priority
- Only Analogue trunks are connected to ASB 150 02 => state the IC-CU_ board for the first priority

valid data: 01 000 - 56 000
default data: Empty

0172
Diversion on not available internal

Only available using the GAP protocol !

This command is used to activate diversion on not available for internal calls. Diversion on not available is a result of a not available cordless. If no diversion address is specified the diversion is inactive.

```
10 Jul 14:40   +15°
DIV NOT AVAIL INT.   0172     xxxx     >
backward    forward      c/i      return
```

xxxx Enter common directory number
Press ENTER

```
10 Jul 14:40   +15°
            zzzzzzzz    0172     xxxx
backward    forward      c/i      return
```

zzzzzzzz Enter diversion address
Note: After a call diversion "on not available" no repeated call diversion is possible any more.

0173
Diversion on not available external

Only available using the GAP protocol !

This command is used to activate diversion on not available for external incoming calls. Diversion on not available is a result of a not available cordless. If no diversion address is specified the diversion is inactive.

```
10 Jul 14:40   +15°
DIV NOT AVAIL EXT.    0173  xxxx   zzzzzzzz
backward    forward      c/i      return
```

xxxx Enter common directory number
Press ENTER

```
10 Jul 14:40   +15°
            zzzzzzzz    0173     xxxx
backward    forward      c/i      return
```

zzzzzzzz Enter diversion address

Note: After a call diversion "on not available" no repeated call diversion is possible any more.

Following commands have to be programmed to enable the "Who caller list" on the portable telephones

6803
Tenant Route

This command is used to define for each tenant group the default trunk route which shall be seized when a call is set up from the caller list.
Default value = Empty

1936
International prefix to be included

Specifies the prefix code for international calls. The prefix is included as predigits to the received calling/connected party number from the ISDN network.
On the system phones the complete public subscriber number is displayed.
Value: 1-4 digits

1937
National prefix to be included

Specifies the prefix code for national calls. The prefix is included as predigits to the received calling/connected party number from the ISDN network.
On the system phones the complete public subscriber number is displayed.
Value: 1-4 digits

Commands via Cordless System Manager

The Cordless System Manager software is mandatory for system use. The sordless system software runs on a Personal Computer and communicates with the IC-CU_ card.

The Cordless System Manager contains functions for the Integrated Cordless system initialization, system maintenance and updating, system fault finding and repair.

The Cordless System Software has a menu driven user interface. Separate text files permit you to translate and obtain the menus in the desired language.

On-line and Off-line Menus

The cordless system software has two types of menus, these being On-line menus and Off-line menus. On-line menus require a valid connection with the Integrated Cordless IC-CU_.

Authority Levels and Passwords

Security is an important issue in the integrated cordless system. Therefore, the On-line functions have been divided into three authority levels, all protected by a password. Depending on the password entered, different authority levels may be reached providing different menus. The three authority levels are: Receptionist, System Manager and Distributor.

Access to the Off-line menus is not protected by a password as there is no connection with the integrated cordless system and therefore no unauthorized access to the integrated cordless system is possible.

Receptionist

The Receptionist has the lowest authority level. The Receptionist menu allows you to administer Portable Telephones.

System Manager

The next authority level is the System Manager. When you log in as System Manager, you will see both the System Manager menu and the Receptionist menu. The System Manager menu allows you to maintain the integrated cordless system.

Distributor

The Distributor level is the highest authority level. When you log in as Distributor, you will see all the available menus: the Distributor menu, the System Manager menu and the Receptionist menu. The Distributor menu allows you to initialize the IC-CU_.

Standby Protection

To protect the system against misuse after a correct password is entered, a Standby mode is used. The program switches to the Standby mode when during a 5 minute period the keyboard of the PC has been left untouched. After entering a correct password the corresponding authority level is selected.
The standby protection is not applicable for the Off-line menus.

Initialization States

The integrated cordless system can be in two clearly different states:

- IC-CU_ is not yet initialized,
- IC-CU_ is initialized.

When the IC-CU_ is not yet initialized the Cordless System Software requests the input of the Distributor password and then displays sequentially a number of screens that must be filled with data. Only after this is completed the program enters the Distributor authority level.
When the IC-CU_ is initialized the program enters the authority level according to the password entered.
Default password: "AAAAAA"

User Interface

Introduction

The user interfaces with the Cordless System Manager by means of menus. The program presents the name of the authority level on the first line when necessary.

Switching between Menus and Screens

When you want to return to a previous menu, press the <Esc> key. If there is no previous menu, the <Esc> key stops the program (after acknowledgement).
When a large amount of data does not fit on a single screen, you can use the <PgDn> and <PgUp> keys to display the next or preceding block of information.

Filling-out Fields

Dialogue screens contain several questions followed by fields. Fields are shown as inverse blocks and are to be filled with values. Several fields contain a default value. You can move the cursor from one field to an other field by pressing the <Enter> key or an ’Arrow’ key.
When you enter letters, they are shown on the screen as capital letters. When the input is processed, no distinction is made between small and capital letters.
From any field, you may close the screen with Continue <F5>. From the last (final) field, you may also close the screen with <Enter>.

Getting Started

1. Start the Cordless Syst.Software after the downmost green LED on the IC-CU_ board is switched off.

2. Go to the directory in which the Cordless System Software has been installed.

3. In most cases, you can start the Cordless System Software by just typing DCT <Enter>.
   You may also use command line options:
   DCT /OFFLINE. Starts the Cordless System Software in Off-line mode.
   DCT /B<bit rate>. Example: DCT /B9600. This option allows you to change the bit rate with the Desk Charger/Programmer. This may be useful when you want to down-load software to Portables with a higher (non-default) bit rate. Valid bit rates are: 4800 (default), 9600, 19200 and 38400. Consult your PC documentation to check which bit rates are supported for the COM2 port.

4. When the program has correctly started-up the welcome menu containing the name of the program is displayed.

Now the password of the Distributor, the System Manager or the Receptionist may be typed.
Depending on the password which has been entered, the Distributor, System Manager or Receptionist menus are displayed.
If the system is not initialized, the Distributor has to follow the procedure as described in the following chapter.

Initialization and Making the System Operational

Introduction

Once the system has been assembled it must be made operational. Therefore, a number of system parameters in the IC-CU_ must be initialized and also the Portable Telephones have to be programmed. Initializing the IC-CU_ can only be done by the Distributor. Programming Portable Telephones can be done by the Receptionist or the Distributor.
When the preparations have been carried out the Cordless System Manager starts an initialization process. This initialization process will successively invoke a number of commands and screens. Enter the required parameters and then get the system operational.

Initializing the Integrated Cordless System

Password Distributor

The 'Password Distributor' screen asks you to fill in the password of the Distributor. The 'default' Distributor's password is factory-set. It must be communicated to you when the system is delivered.

Country Selection

The Country Selection screen asks you to specify the country where the system is installed.
Please choose any value.

Ringing Cadences

Three screens specify the ringing cadences for Int. Calls, External Calls, and Call Back ringing types.

Initialization Passwords

A password consists of a maximum of six alphanumeric characters.
Note: Take care not to forget the Distributor's password; only the manufacturer can change it.

Initialization Input Values

This screen allows you to specify the operational characteristics of the IC.

System Number (A protocol)

A number that is used to distinguish the DECT system from other DECT (neighbouring) systems.
The range is from 1 to 65535.
Do not take the default value ’1’, but choose for each system an unique number !

Access Rights Identity (GAP protocol)

A number that is used to distinguish the DECT GAP system from other DECT GAP (neighbouring) systems. The B-ARI number is distributed by ETSI !

Number of Cabinets

All Integrated cordless boards have to be in the same cabinet. This value depends on in which cabinet the boards are installed:
Cabinet no. 0: Number of cabinets = 1
Cabinet no. 1: Number of cabinets = 2
Cabinet no. 2: Number of cabinets = **4**

Default value: 1

Dialling Method

Set to value: PULSE

DCA Operation Class

We recommend to take the default value ’1’.
This command is not applicable for the Integrated Cordless System !

Wait for Dial Tone

GAP: We recommend to take the value ’NO WAIT’
A-protocol: We recommend to take the default value ’T’.
This command is not applicable for the Integrated Cordless System !

Date and Time DCT1800

Sets the date and time of the real time clock on the IC-CU_.

Distributor Menu

Password

Menu path: Distributor - Password

This command changes the Distributor's password. A password consists of a maximum of six alphanumeric characters.

System Size

Menu path: Distributor - System - System size

This command specifies in which Cabinet number the IC-boards are installed (value: 1,2 or **4**).

Dialling

Menu path: Distributor - System - Dialling

Set to value: PULSE

DCA Class

Menu path: Distributor - System - DCA class

This command is not applicable for the Integrated Cordless System !

Restore Country Data

Menu path: Distributor - System - Parameters - Country Selection

The Country Selection screen asks you to specify the country where the system is installed. Please choose any value. It is independent which one you are choosing.

SICOFI Parameters

Menu path: Distributor - System - Parameters - Customize - Sicofi

This command is not applicable for the Integrated Cordless System !

LTU Code

Menu path: Distributor - System - Parameters - Customize - LTU code

This command is also invoked by the initialization procedure.

R-button Method
This command is not applicable for the Integrated Cordless system !

Differential Ringing
The Integrated Cordless system supports three ringing types: internal, external and call-back. Each ringing type results in a different ringing cadence on the Portable Telephone. Select No only when this feature is not desired. In this case the ringing cadences of the Portable Telephone will be that of the defined external ringing.

SPU Parameters

Menu path: Distributor - System - Parameters - Customize - SPU

This screen shows a number of parameters which should not be changed normally. These parameters are country dependent and are loaded into the IC system by the country selection command.

Dial Tone Detection Time

This command is not applicable for the Integrated Cordless System !

Dial Tone Detection Level

This command is not applicable for the Integrated Cordless System !

Dial Tone Level Shifts

This command is not applicable for the Integrated Cordless System !

Alternative Dial Tone Level Shifts

The value must be 0 (default). This command is not applicable for the Integrated Cordless System !

SPU-S Dial Tone Detection Level

This command is not applicable for the Integrated Cordless System !

Echo-cancelling Time

To cancel echoes with an echo time of up to the indicated value (e.g. 7 ms). Echoes with echo times higher than this value are not cancelled. The range is from 4 - 15 ms.

Soft Suppression Level

To reduce the speech from the other party (far end) with the indicated value (e.g. 12 dB) when near end speech is detected. The range is from 0 to 50 dB.

Wait for Dial Tone

Menu path: Distributor - System - Wait for dial tone

This command is not applicable for the Integrated Cordless System !

Carriers

Menu path: Distributor - System - Carriers

This command allows you to disable one or more carriers on the IC air interface. Normally all ten carriers should be enabled. However, when necessary one or more carriers can be disabled.

Reinitialize

Menu path: Distributor - System - Reinitialize

The reinitialize command erases the EEPROM on the CPU board and thus it clears all IC system parameters. The IC-CU_ is reset and the IC system must be initialized again. It is recommended to make a copy of the EEPROM before executing this command (see also chapter "Upload" under "System Manager menu" in this document).

Subscription

Before a cordless phone can be used on a system, the cordless phone must be subscribed to that system. During the subscription process the cordless phone is provided with an index with the following information:

- IPUI (International Portable User Identity)
- PARK (Portable Access Rights Key)
- In case of cable description; the ringing cadences

The extension number is a part of the IPUI.

Depending on the type of cordless phone a number of indexes can be programmed into a cordless phone. Before a cordless phone can be programmed, its extension number must have been defined by the add extension command of the system manager menu.
The cordless phone can be subscribed via the air (On-Air subscription) and, dependent on the type, via a programmer (cable subscription).

Cable Subscription

Menu path: Receptionist - Administrate - Cable subscription
Menu path: Distributor - Administrate - Cable subscription

By this command cordless phones are subscribed to the DCT1800 system via a programmer. The advantage of cable subscription with respect to On-Air subscription is that you never have to type in the IPEI of the cordless phone and that you can see to what ARIs (systems) the cordless phone has been subscribed already. Furthermore the cordless phone will be provided with the ringing cadences

specified during initialization when there are no indexes programmed in the cordless phone yet. This is the case when the cordless phone has never been subscribed before, or when all indexes are cleared. If a cordless phone is subscribed to a second system, the ringing cadences of the first system are not overwritten.

Setting the cordless phone types in the initialization mode

1. Insert the RJ12 plug of the programmer cable in the programmer part.

2. Connect the programmer to the COM2 port of your personal computer.
   Use the cable adapter (25 to 9 pins) if this is a 9pins connector.

3. Take care that the battery is charged. A cordless phone with a flat battery cannot be programmed.

4. Switch off the cordless phone and connect the other end of the programmer cable to it.

5. Switch on the cordless phone, by pressing the 1, 4 and ON keys simultaneously until the message *Init* (on DT 368) is displayed.

6. Follow the instructions under header Subscribing the cordless phone to initialize the phone.

7. When the programming is completed, confirm and exit the initialization mode by pressing the ON key. The cordless phone is now operational.

8. Disconnect the cordless phone from the programmer cable.

Subscribing the cordless phone

1. Select the cable subscription command. The right hand side of the cable subscription screen gives you a list of indexes contained in the cordless phone. The left hand side of the screen displays the values that are to be programmed into the cordless phone. The default extension number is the first free extension number in the radio exchange.

2. If all indexes are in use enter the number of the index which has to be overwritten.

3. Confirm the default extension number or specify another one. The specified extension number and its associated data are downloaded into the first free index of the cordless phone. When ready, the message Portable subscribed. <Enter> is displayed.

On-air subscription (GAP only)

Menu path: Receptionist - Administrate - Onair subscription - Subscribe
Menu path: Distributor - Administrate - Onair subscription - Subscribe

By this command cordless phones are subscribed to the DCT1800 GAP system via the air. The advantage of On-Air subscription with respect to cable subscription is that you do not have to connect a programmer to the cordless phone. The cordless phone can be anywhere in the coverage area of the system. On-Air subscription has to be used for GAP cordless phones that do not support cable subscription.

The first screen only shows the first free extension number and a field to fill in the cordless phones IPEI number. The extension number can be overwritten by another free extension number. You can subscribe cordless phones with and without using their IPEI numbers. Only one cordless phone can be subscribed without IPEI at a time.

When you press enter the PARK and an authentication code are given. The PARK can be entered in the cordless phone to speed up subscription. The authentication code must be entered in the cordless phone to enable subscription to the system. See the users guide of the cordless phone on how to subscribe to the system.
When the procedure begins the on-air subscription mode is automatically set to on. The cordless phone must subscribe to the system within 15 minutes. Timed out cordless phones cannot be subscribed anymore unless the time out is reset by means of the On-Air subscription mode on command.

Note:
When the cordless phone does not contain any index, the cordless phone also does not have any ringing cadence. If the cordless phone is subscribed via the air it is not provided with the systems ringing cadences. As soon the cordless phone is subscribed, it uses default ringing cadences stored in the cordless phone. For cordless phones which support cable subscription, these ringing cadences can be overruled by using the ringing command after connecting the cordless phone to the programmer.

On-Air subscription mode on/off (GAP only)

Menu path: Receptionist - Administrate - Onair subscription - Mode on/off
Menu path: Distributor - Administrate - Onair subscription - Mode on/off

By this command On-Air subscription can be switched on and off. When subscription is switched off all pending subscriptions are timed out; on the list extension number screen all these extensions will change from SUB to TIM. When subscription is switched on, all subscriptions with the TIM status will get the SUB status and a new timeout period of 15 minutes starts.

Cancel subscription (GAP only)

Menu path: Receptionist - Administrate - Cancel subscription
Menu path: Distributor - Administrate - Cancel subscription

By this command a subscription can be cancelled. If the cordless phone is switched on and in system range, the subscription is also deleted from the cordless phone. Otherwise the cordless phone cannot longer access the system because its subscription data is deleted from the systems data base.
Note:
Subscription can also be cancelled during an ongoing call. As a result the call will be cancelled.

Clear all indexes in cordless phone

Menu path: Receptionist - Administrate - Clear - Clear all
Menu path: Distributor - Administrate - Clear - Clear all

This command clears all indexes in a cordless phone. To carry out this command, the cordless phone must be connected to the programmer cable and put in the initialization mode, see paragraph 7.2.1.

Clear on index

Menu path: Receptionist - Administrate - Clear - Clear on index
Menu path: Distributor - Administrate - Clear - Clear on index

This command clears a specific index in a cordless phone. Also subscription of other systems can be cleared. To carry out this command, the cordless phone must be connected to the programmer cable and put in the initialization mode. Select the index to be cleared and confirm (default index = 1).

Internal call, external call, call back and custom ringing

Menu path: Receptionist - Administrate - Ringing - Internal call/External call/Call back
Menu path: Distributor - Administrate - Ringing - Internal call/External call/Call back

These commands allow you to adapt the ringing cadences that have been programmed into a cordless phone. In this way the cordless phone can be programmed with personal ringing cadences. To carry out this command, the cordless phone must be in initialization mode.

Cordless phones know the following ringing types:

Type 1 Internal call.

Type 2 External call.

Type 3 Call back.

Types 4 to 8 Custom types (reserved).

Note:

The custom cadence settings are reserved for future use and are not described here.

A cadence is set by specifying the ON and OFF times on the screen for each ringing type. The first not empty field (an empty field is a field filled with blanks) in an ON time field is evaluated as the first ON time. At least one ON and one OFF field must be filled in.
The ON/OFF times are presented in milliseconds. The minimum value is 0 milliseconds, the maximum value is 5000 milliseconds.
The maximum number of times that can be entered for one cadence setting is 40. The maximum number of all times, for all 8 cadence settings is 115.

Find on IPEI (GAP only)

Menu path: Receptionist - Administrate - Find IPEI
Menu path: Distributor - Administrate - Find IPEI

This command allows you to locate the owner of phones which have been lost or misplaced and then returned to the system administration centre by a third party. Entering the IPEI number of the misplaced phone will display a further screen which shows the extension number and TPUI number of the owner.

Add Base Station

Menu path: Distributor - Base Station - Add

This command defines a new Base Station in the IC-CU_ data base. A Base Station is defined by its controlling circuit on the IC-LU or IC-CU2 board and its cable delay value.
Board Address: - Cabinet Number.
- Board Number. Defines the position of the IC-LU within the Cabinet.

The numbering of the Board Numbers is in following way:

Slot number of cabinet	0	1	2	3	4	5	6	7	8
Board number	24	28	32	36	40	44	48	52	56

Base Number
The peripheral number on the IC-LU / IC-CU2.
Valid numbers: IC-LU: 1 - 8 / IC-CU2: 1 - 4
NOTE: Max. 7 IC-LUs can be installed !

Delay
This delay value is needed to assure proper operation of handovers between Base Stations.
Use value 1 = Automatic delay

Change Base Station

Menu path: Distributor - Base Station - Change

This command changes the delay value of a Base Station. This delay is set by the `Add Base Station' command. During the change action no calls can be made via the Base Station. It may be necessary to change a delay value if:

- the Base Station has been connected to another cable of a different length or type,
- an incorrect delay value was entered,
- a defect Base Station must be replaced with a correctly functioning one.

Enter the board address (Cabinet and board number) and the Base number (Peripheral number).

Delete Base Station

Menu path: Distributor - Base Station - Delete

This command deletes a Base Station from the IC-CU_ data base. It is used if a Base Station is to be removed from the IC system. During the delete action the Base Station may not have any existing calls.
Enter the board address (Cabinet and board number) and the Base number (Peripheral number).
Calls using the Base Station that is to be deleted are not terminated. Therefore, if the last call using the Base Station is not terminated within 5 minutes of the request, the request is cancelled. If you still want to delete the Base Station you have to select the delete command once again.

List Base Stations

Menu path: Distributor - Base Station - List

This command gives a list of Base Stations with their related data as defined in the IC-CU_ data base. The settings shown have been defined by the Add Base Station command. The columns on the screen have the following meaning:

Column 1 Cabinet Number
Column 2 Board Number of controlling IC-LU or IC-CU2
Column 3 Peripheral Number on IC-LU or IC-CU2
Column 4 Base Station Number (Base Station Identity)
Column 5 Delay value

Download One Base

Menu path: Distributor - Base Station - Download - One Base

This command loads a file with software from the PC to a specified Base Station. Downloading takes about half an hour. The IC system remains operational.

1. Specify the drive and directory. After a few seconds you are prompted to enter the filename.
2. Specify the address of the Base Station (Cabinet number, board number and Base Station number). Then an overview of the selected file (software version) and Base Station is displayed. Evaluate whether to proceed with downloading or to stop it.
3. If the Base Station has already the version that is to be downloaded, specify if overwriting of the Base Station software is desired.
4. After a few seconds a screen shows `Downloading is busy'. A counter indicates the percentage of the file that has been downloaded.

A download action can not take place when the specified Base Station is in use for a call. In such a situation the download action may be aborted by pressing the <Esc> key or you may decide to wait till the Base Station becomes free. After 30 seconds you are asked whether to continue the download action.
When the software to the Base Station has been downloaded, another Base Station can be selected. When the required Base Station(s) has/have been provided with the software, the Reset Base Station command must be executed to download the cable delay value from the IC-CU_ database to the respective Base Station to make it operational.
Note: During the download process, the base stations on the same IC-LU/IC-CU2 are out of operation.

Download all Bases

Menu path: Distributor - Base Station - Download - All Bases

This command loads a file with software from the PC to all connected Base Stations. Only Base Stations whose delay values have been specified and do not have the new software, will be loaded. Ongoing calls are terminated unconditionally. As the download takes time and the IC system is not operational it is recommended to execute this function during night-time.
When the broadcast capability is not used, downloading takes about half an hour per Base Station. When the broadcast capability is used, downloading takes about (if no retries):

- 1 hour for 2 Base Stations connected to 1 IC-LU.
- 2 hours for up to 40 Base Stations connected to 5 IC-LUs.

1. Disable the 24 Hours (24H) test and the Acknowledge (ACK) test (menu path: Distributor - Diagnostics/test - Setting - Test time - 24H control and Ack control).
2. Execute the `Download all Bases' command and specify the drive and directory.
   After a few seconds you are prompted to enter the filename.
3. The following optional screen may be shown: `DCT response indicates IC-CU_ has broadcast capability .... use broadcasting to speed up the download process.
4. The program asks whether `Auto-repeat' is to be used. If you select Yes the program automatically retries downloading if necessary. A maximum of three attempts can be done.
5. An overview of the selected file and its software version is displayed. Evaluate whether to proceed with downloading or to stop it.
6. After some time (less than 1/2 minute per Base Station) the program shows a status report screen. This screen lists all Base Stations with their IC-LUs and IC-CU2. A counter indicates the percentage of the file that has been downloaded. You can stop downloading by pressing

the <Esc> key and entering the Distributor password.

7. At the end of the download process the program records the result both on the screen and in the DWN_BS.SAV file. The program then resets the entire IC system. So, the cable delay values are downloaded to the Base Stations and the IC system becomes operational.
8. Carry out the `Version Info' command to check if all Base Stations contain the correct software (firmware) indeed.
9. Enable the 24 Hours (24H) test and the Acknowledge (ACK) test again.

24H Control

Menu path: Distributor - Diagnostics/test - Settings - Test time - 24H control

This command enables or disables the periodic 24 Hours (24H) test. If enabled, it also sets the time of the day the 24 hours test is started.
Under normal conditions the 24 hours test should be executed, otherwise select N(o). The selection that is made is stored in EEPROM. Factory setting: Y(es).
If Yes is selected the next screen with the current test time and the new test time is displayed. It is convenient to select a time when the system is not being (very little) used; e.g. at night. The selection that is made is stored in EEPROM. Factory setting: 1.20 a.m.
Faults detected by these tests are logged in the error table.

ACK Control

Menu path: Distributor - Diagnostics/test - Settings - Test time - Ack control

This command enables or disables the periodic Acknowledge (ACK) test. If enabled, it also sets the period between the tests. Under normal conditions the Acknowledge test should be executed, otherwise select N(o). The selection that is made is stored in EEPROM. Factory setting: Y(es).
If Yes is selected a new test period for the Acknowledge tests (in hours and minutes) can be entered. Factory setting: every 2 minutes. New period is stored in EEPROM.
Faults detected by these tests are logged in the error tables.

Overwrite Previous Logged Errors

Menu path: Distributor - Diagnostics/test - Settings - Error messages - Overwrite yes/no

This command enables or disables the Overwrite option of the Info Table and the Fault Table. If enabled, the latest reported error may overwrite a previous logged error. The selection that is made is stored in EEPROM. Factory setting: N(o).

Approval Test

Menu path: Distributor - Diagnostics/test - Settings - Approval test

This command puts a Base Station in the Dect Approval Test (DAT) mode. This command is not intended for normal installation and maintenance purposes. When a Base Station is in DAT mode, the whole IC system is not operational.

Version Info

Menu path: Distributor - Diagnostics/test - Info - Version info

This command displays the software revision level of all operational Base Stations.

Addr	Address of Cell Link Circuit (CLC) to which the Base Station is connected: - First column: Cabinet Number. - Second column: Board Number of IC-LU or IC-CU2. - Third column: Peripheral Number of IC-LU or IC-CU2.
Type	Always `RFP': Radio Fixed Part (Base Station).
Firmware	Revision level of the software, CAH/KRCNB 201/n, stored (down-loaded) in flash memory. `None' means that down-loading has been failed.
Bootcode	The revision level of software and the CPU, DTU, CLU and SPU for DECT GAP are stored in non-volatile memory.

Error Tables

The Test and Maintenance software in the IC-CU_ maintains three logging tables that can be read by the Cordless System Manager. These logging tables are referred to as:

- the Info Table,
- the Fault Table,
- the Service Table.

The Info and Fault Tables are meant for IC support specialists. The Service Table is meant for field service technicians.

Info Table

Menu path: Distributor - Diagnostics/test - Info - Error tables - Info

This command displays the contents of the Info Table. The Info Table contains warning messages which are meant for the IC support specialist.

Fault Table

Menu path: Distributor - Diagnostics/test - Info - Error tables - Fault

This command displays the contents of the Fault Table. The Fault Table contains error messages meant for the IC support specialist.

Service Table

Menu path: Distributor - Diagnostics/test - Info - Error tables - Service

This command displays the contents of the Service Table. The Service Table contains error messages meant for the field service technician.

Reset Tables

The Test and Maintenance software in the IC-CU_ maintains a number of reset tables that can be read by the Cordless System Manager. These reset tables are meant for IC support specialists. In the case of certain problems, you may be asked to send table loggings to your IC supplier.

Power on Reset

Menu path: Distributor - Diagnostics/test - Info - Reset table - Power on

This command displays the history of IC-CU_ Power-on resets (number of resets and time of last reset).

Watchdog Reset

Menu path: Distributor - Diagnostics/test - Info - Reset table - Watchdog

This command displays the history of IC-CU_ watch-dog resets (number of resets and time).

HSCX, HDLC A, HDLC B and 8032 Reset

Menu path: Distributor - Diagnostics/test - Info - Reset table - HSCX/HDLC A/HDLC B/8031

These commands display the number of resets of the following units on the CPU board: HSCX, HDLC A, HDLC B and Board Controller (8032).

Absolute Reset

Menu path: Distributor - Diagnostics/test - Info - Reset table - Absolute

This command displays the number of resets and time of any last reset on the selected System Board. Enter the position of the board (Cabinet and Board Number).

Relative Reset

Menu path: Distributor - Diagnostics/test - Info - Reset table - Relative

This command displays the number of resets and time of any last reset of the selected Peripheral (circuit number 1 ... 8) and Board Controller (circuit number 9) on the System Board (does not include the IC-CU_ board). Enter the position of the Peripheral (Cabinet, Board Number and Circuit Number).

System Manager Menu

Password

Menu path: System Manager - Password

This command changes the System Manager's password. Two different situations can be distinguished:
- You are logged in as Distributor or,
- You are logged in as System Manager.

So, the System Manager's password can be changed by the Distributor and by the System Manager himself.
The Distributor may give the System Manager a new password if he has forgotten the old one. The Distributor does not have to know the old password of the System Manager, due to his higher authority level. He must enter his own password and subsequently change the System Manager's password.

File Copy, Delete

Menu path: System Manager - File - Copy/Delete
Menu path: Off-line - File - Copy/Delete

These commands allow you to carry out the MS-DOS commands `Copy' and `Delete', without quitting the Cordless System Manager. By selecting either copy or delete, the first screen displays the default directory (the directory of the Cordless System Manager). To change to another drive, type A...D and then type the path name.

Add Extension

Menu path: System Manager - Administrate - Add

This command defines one or more Portables in the IC-CU_ data base. The command assigns the following items to an Extension Number (telephone number):

- A-protocol: Portable Technical Number (PTN).
- GAP-protocol: Temporary Portable User Idetity (TPUI)

The program also takes the first free Portable Technical Number (PTN). PTNs are assigned on a cyclic base from 1 to 4094. In the IC system the Portable Telephone is identified by its TPUI / PTN.
After completing this command the Portables must be programmed by the Subsription command.
The Extension Numbers can be entered as a range of numbers (e.g. 950 to 992) or as single numbers (e.g.: 273, 278, 290 etc.). Defining a range of numbers is called Block Assignment.

Block Assignment

When block assignment is done, specify the first (lowest) Extension Number and then the last Extension Number. The message `Add range of portables? Y (Yes/No)' is displayed. Confirm by pressing Y(es).

Single Assignment

When only single numbers can be added, input this number as first Extension Number and then press twice <Enter>. Of course any free circuit can be selected by the System Manager.

Delete an Extension Number

Menu path: System Manager - Administrate - Delete - Extension number

This command deletes the definition of a Portable from the IC-CU_ data base. So, the Extension Number and the associated Temporary Portable User Idetity (TPUI) / Portable Technical Number (PTN) are deleted. Also the relation with a certain LTC or DTU channel is cleared. After deleting an Extension Number the same Extension Number can be re-used for another Portable.
This command may be used when a Portable Telephone is lost. A Portable Telephone with a deleted Extension Number can not place calls any more.
The deleted TPUI / PTN will not be assigned to another Extension Number (Portable) until the cycle is completed (see Add Extension). This is to provide protection against misuse.

Block deletions

A range of Extension Numbers can be deleted by specifying the first and last Extension Number.
If a range of Portables must be deleted the Extension Number of the first and the last Portable must be specified.

Single Deletion

When one Portable has to be deleted only the first Extension Number has to be filled in.

List Extension Numbers

Menu path: System Manager - Administrate - List - Extension number

This command lists for each Portable Telephone, defined in the IC-CU_ data base, the Temporary Portable User Idetity (TPUI) / Portable Technical Number (PTN) and the Line connection.
The Portables are sorted by Extension Number.

Ringing Cadences

Menu path: System Manager - Administrate - Ringing

This command is also invoked by the initialization procedure.
This command specifies three different cadences which are to be recognised by the IC system. The specified cadences are also used as defaults when programming Portables. If Portable Telephones must ring with different cadences, use the Portable Ringing command.
The IC system supports three ringing types, referred to as Internal Call, External Call and Call-back.
The cadences are defined by means of three screens. Each ringing type has its own screen. A ringing type is identified by the time the ringing is active (time = ON) and the time the ringing is not active (time = OFF).
The IC system uses all the necessary fields that will enable it to recognise the ringing type. Additional

fields in a screen are not used to recognise a ringing cadence, but only to regenerate a ringing cadence by the Portable Telephones.
The cadences specified here are saved on disk in the file `cadence.SAV' (in the directory of the Cordless System Software). These cadence settings will be downloaded into the Portable Telephone when programming it by the Program Portable command.
At least one ON and one OFF time must be entered. The minimum value is 0 milliseconds, the maximum value is 5000 milliseconds. The maximum number of lines that can be entered for one cadence setting is 40. The maximum number of all times for the 3 cadence settings is 115.

Default values:
- internal call: 1 000 / 4 000
- external call: 300 / 400 / 300 / 4 000
- call-back call: 500 / 500

Time

Menu path: System Manager - Time/date - Time

This command sets the time of the real time clock on the IC-CU_ of the IC-system.
The current system time appears and a new time can be entered.

Date

Menu path: System Manager - Time/date - Date

This command sets the date of the real time clock on the IC-CU_.
The current system date of the IC system appears and a new date can be entered.

Download

Menu path: System Manager - Down/upload - Download

This command restores the IC-CU_ data base. It re-initializes the EEPROM of the IC-CU_ board with back-up data from a diskette or hard disk. The name of the file which is downloaded from PC to IC-CU_ is `EEPROM.SAV'.
Downloading is protected by password. After typing the password of the Distributor or the System Manager the `download' screen is displayed.

Upload

Menu path: System Manager - Down/upload - Upload

This command makes a back-up of the IC-CU_ data base. It should be used once the operational characteristics of the IC-system have been specified or at the time when they are changed. Upload saves the data on a PC diskette or hard disk in the file `EEPROM.SAV'. An `old' version of `EEPROM.SAV' will be overwritten.

Service Table

Menu path: Distributor - Diagnostics/test - Info - Error tables - Service
Menu path: System Manager - Control - Service

This command displays the contents of the Service Table. The Service Table contains error messages meant for the field service technician.

System

Menu path: Distributor - Diagnostics/test - Info - System
Menu path: System Manager - Control - System

This command lists the states of the functional blocks in the IC-CU_. A functional block may be a System Board or a circuit on a board.

Base Station List

Menu path: System Manager - Control - Base Station List

This command gives a list of Base Stations with their related data as defined in the IC-CU_ data base.

Replace Board

Menu path: System Manager - Control - Replace board

This command puts a System Board out of operation. It must be used if a System Board is to be replaced by a board that must be of the same type and placed on the same position (e.g.: board is defect).
When the Replace Board command is selected you must enter the board position (cabinet and board number). During the replace action all peripherals on the board in question are blocked for new calls.
Calls using peripherals on a board that is to be replaced are not stopped. Therefore, if the last call on the board is not terminated within 5 minutes of the request, the request is cancelled. If you still want to replace the board you have to select the Replace Board command once again.
NOTE: Not applicable for the IC-CU_.

Remove Board

Menu path: System Manager - Control - Remove board

This command deletes a System Board from the IC-CU_ data base. It must be used to eliminate a System Board (e.g.: board is replaced by another type, board is placed on another position in the Cabinet). Other data that is related to the board must be deleted from the IC-CU_ database.
When the Remove Board command is selected you must enter the board position (cabinet and board number). During the remove action all peripherals on the board in question are blocked for new calls.
Calls using peripherals on a board that is to be removed are not stopped. Therefore, if the last call on the board is not terminated within 5 minutes of the request, the request is cancelled. If you still want to remove the board you have to select the Remove Board command once again.
NOTE: Not applicable for the IC-CU_.

Clear Service Table

Menu path: System Manager - Control - Clear service

This command clears the Service Table. The logging of error messages in this table is stopped when it is full. To allow the logging of new error messages after corrective actions the Clear Service Table command must be selected.

Printing of System Error Messages

Menu path: Distributor - Diagnostics/test - Setting - Error messages - Print yes/no
Menu path: System Manager - Control - Print yes/no

This command enables or disables the system printer that is connected to the IC-CU_. If a hard copy of the messages in the Info Table, Fault Table and Service Table is required by the support specialist, the option Yes on the print screen must be selected. The selection that is made is stored in EEPROM. Factory setting: N(o).

Reset Alarm

Menu path: System Manager - Control - Reset - Alarm

Reset Board

Menu path: System Manager - Control - Reset - Board

This command resets an IC-LU board.

Reset Base Station

Menu path: System Manager - Control - Reset - Base Station

This command resets a Base Station and loads the delay value from the IC-CU_ database into the Base Station. This command must be carried out after downloading new software to a Base Station by means of the Download One Base command.

Parameters (Recall button)

Menu path: System Manager - Parameters

This command is not applicable for the Integrated Cordless System !

Receptionist Menu

The Receptionist menu can be accessed by the Distributor, the System Manager and the Receptionist.

Password

Menu path: Receptionist - Password

This command allows you to change the receptionists password. Three different situations can be distinguished each situation leading to a slightly different screen:

- You are logged in as distributor
- You are logged in as system manager
- You are logged in as receptionist

The receptionists password can be changed by the distributor, the system manager and the receptionist himself. A password consists of a maximum of six alphanumeric characters. No difference between capital and lower case is made.
The distributor and the system manager may give the receptionist a new password if he/she has forgotten the old one. The distributor and the system manager do not have to know the old password of the receptionist, due to their higher authority levels. They must enter their own passwords and then the new receptionists password.
The receptionist changes his/her own password by first entering his/her (old) password and then the new password.

Subscription

Before a cordless phone can be used on a system, the cordless phone must be subscribed to that system. During the subscription process the cordless phone is provided with an index with the following information:

- IPUI (International Portable User Identity)
- PARK (Portable Access Rights Key)
- In case of cable description; the ringing cadences

The extension number is a part of the IPUI.
Depending on the type of cordless phone a number of indexes can be programmed into a cordless phone. Before a cordless phone can be programmed, its extension number must have been defined by the add extension command of the system manager menu.
The cordless phone can be subscribed via the air (On-Air subscription) and, dependent on the type, via a programmer (cable subscription).

Cable Subscription

Menu path: Receptionist - Administrate - Cable subscription
Menu path: Distributor - Administrate - Cable subscription

By this command cordless phones are subscribed to the DCT1800 system via a programmer. The advantage of cable subscription with respect to On-Air subscription is that you never have to type in the IPEI of the cordless phone and that you can see to what ARIs (systems) the cordless phone has been

subscribed already. Furthermore the cordless phone will be provided with the ringing cadences specified during initialization when there are no indexes programmed in the cordless phone yet. This is the case when the cordless phone has never been subscribed before, or when all indexes are cleared. If a cordless phone is subscribed to a second system, the ringing cadences of the first system are not overwritten.
Setting the cordless phone types in the initialization mode

1. Insert the RJ12 plug of the programmer cable in the programmer part.

2. Connect the programmer to the COM2 port of your personal computer.
   Use the cable adapter (25 to 9 pins) if this is a 9pins connector.

3. Take care that the battery is charged. A cordless phone with a flat battery cannot be programmed.

4. Switch off the cordless phone and connect the other end of the programmer cable to it.

5. Switch on the cordless phone, by pressing the 1, 4 and ON keys simultaneously until the message *Init* (on DT 368) is displayed.

6. Follow the instructions under header Subscribing the cordless phone to initialize the phone.

7. When the programming is completed, confirm and exit the initialization mode by pressing the ON key. The cordless phone is now operational.

8. Disconnect the cordless phone from the programmer cable.

Subscribing the cordless phone

1. Select the cable subscription command. The right hand side of the cable subscription screen gives you a list of indexes contained in the cordless phone. The left hand side of the screen displays the values that are to be programmed into the cordless phone. The default extension number is the first free extension number in the radio exchange.

2. If all indexes are in use enter the number of the index which has to be overwritten.

3. Confirm the default extension number or specify another one. The specified extension number and its associated data are downloaded into the first free index of the cordless phone. When ready, the message Portable subscribed. <Enter> is displayed.

On-air subscription (GAP only)

Menu path: Receptionist - Administrate - Onair subscription - Subscribe
Menu path: Distributor - Administrate - Onair subscription - Subscribe

By this command cordless phones are subscribed to the DCT1800 GAP system via the air. The advantage of On-Air subscription with respect to cable subscription is that you do not have to connect a programmer to the cordless phone. The cordless phone can be anywhere in the coverage area of the system. On-Air subscription has to be used for GAP cordless phones that do not support cable subscription.

The first screen only shows the first free extension number and a field to fill in the cordless phones IPEI number. The extension number can be overwritten by another free extension number. You can subscribe cordless phones with and without using their IPEI (=International Portable Enduser Identity) numbers. Only one cordless phone can be subscribed without IPEI at a time.

When you press enter the PARK and an authentication code are given. The PARK can be entered in the cordless phone to speed up subscription. The authentication code must be entered in the cordless phone to enable subscription to the system. See the users guide of the cordless phone on how to subscribe to the system.
When the procedure begins the on-air subscription mode is automatically set to on. The cordless phone must subscribe to the system within 15 minutes. Timed out cordless phones cannot be subscribed anymore unless the time out is reset by means of the On-Air subscription mode on command.

Note:
When the cordless phone does not contain any index, the cordless phone also does not have any ringing cadence. If the cordless phone is subscribed via the air it is not provided with the systems ringing cadences. As soon the cordless phone is subscribed, it uses default ringing cadences stored in the cordless phone. For cordless phones which support cable subscription, these ringing cadences can be overruled by using the ringing command after connecting the cordless phone to the programmer.

On-Air subscription mode on/off (GAP only)

Menu path: Receptionist - Administrate - Onair subscription - Mode on/off
Menu path: Distributor - Administrate - Onair subscription - Mode on/off

By this command On-Air subscription can be switched on and off. When subscription is switched off all pending subscriptions are timed out; on the list extension number screen all these extensions will change from SUB to TIM (=TIMe out status). When subscription is switched on, all subscriptions with the TIM status will get the SUB status and a new timeout period of 15 minutes starts.

Cancel subscription (GAP only)

Menu path: Receptionist - Administrate - Cancel subscription
Menu path: Distributor - Administrate - Cancel subscription

By this command a subscription can be cancelled. If the cordless phone is switched on and in system range, the subscription is also deleted from the cordless phone. Otherwise the cordless phone cannot longer access the system because its subscription data is deleted from the systems data base.

Note:
Subscription can also be cancelled during an ongoing call. As a result the call will be cancelled.

Clear all indexes in cordless phone

Menu path: Receptionist - Administrate - Clear - Clear all
Menu path: Distributor - Administrate - Clear - Clear all

This command clears all indexes in a cordless phone. To carry out this command, the cordless phone must be connected to the programmer cable and put in the initialization mode, see paragraph 7.2.1.

Clear on index

Menu path: Receptionist - Administrate - Clear - Clear on index
Menu path: Distributor - Administrate - Clear - Clear on index

This command clears a specific index in a cordless phone. Also subscription of other systems can be cleared. To carry out this command, the cordless phone must be connected to the programmer cable and put in the initialization mode. Select the index to be cleared and confirm (default index = 1).

Internal call, external call, call back and custom ringing

Menu path: Receptionist - Administrate - Ringing - Internal call/External call/Call back
Menu path: Distributor - Administrate - Ringing - Internal call/External call/Call back

These commands allow you to adapt the ringing cadences that have been programmed into a cordless phone. In this way the cordless phone can be programmed with personal ringing cadences. To carry out this command, the cordless phone must be in initialization mode.

Cordless phones know the following ringing types:

Type 1	Internal call.
Type 2	External call.
Type 3	Call back.
Types 4 to 8	Custom types (reserved).

Note:

The custom cadence settings are reserved for future use and are not described here.

A cadence is set by specifying the ON and OFF times on the screen for each ringing type. The first not empty field (an empty field is a field filled with blanks) in an ON time field is evaluated as the first ON time. At least one ON and one OFF field must be filled in.
The ON/OFF times are presented in milliseconds. The minimum value is 0 milliseconds, the maximum value is 5000 milliseconds.
The maximum number of times that can be entered for one cadence setting is 40. The maximum number of all times, for all 8 cadence settings is 115.

Find on IPEI

Menu path: Receptionist - Administrate - Find IPEI
Menu path: Distributor - Administrate - Find IPEI

This command allows you to locate the owner of phones which have been lost or misplaced and then returned to the system administration centre by a third party. Entering the IPEI (=International Portable Enduser Identity) number of the misplaced phone will display a further screen which shows the extension number and TPUI (=Temporary Portable User Idetity) number of the owner.

Equipment

The following boards are necessary for the installation of the "integrated cordless":

- IC-CU
  Integrated Cordless - Control Unit
  based on the FREESET CPU (DCT1800, A-protocol).

  or

  IC-CU2
  Integrated Cordless - Control Unit, Version 2
  based on the IC-CU and IC-LU board, GAP protocol, each IC-CU2 offering:- 8 speech channels
  - 4 ports for base stations

- IC-LU
  Integrated Cordless - Line Unit
  based on the FREESET SLU-board, each IC-LU offering: - 8 speech channels
  - 8 ports for base stations

- FECU for IC-CU_
  Feature Enabling Control Unit (=plug in board for the IC-CU_ with SW-key for enabling configurations of more than 8 portables. See also chapter CAPACITY in this document.)

- FECU for CPU-D4
  Feature Enabling Control Unit (=plug in board for the CPU-D4 with SW-key) that is mandatory using the GAP-protocol (See also chapter CAPACITY in this document).

- PUB 5 or higher version
  Backplane for ASB15002 system cabinet (only valid for BP 250).

The IC-CU_ and all IC-LU boards have to be mounted in the same cabinet (containing the backplane PUB 5 or higher), but not necessarily in the first cabinet (for more informations see document 1531-BDV 113 08 Uen).

INTERCOM

Definition

An Intercom line is a bothway hot-line possibility between two extensions in the system.

Use

The function is particularly useful for executive/secretary connections or between persons who call one another frequently.

The function can also be utilised between a VIP-extension and OPERATOR to identify calls with priority.

The function also allows the caller to be identified in a busy situation.

If so required, the line can be programmed for immediate answer. The call will then, provided there is no ongoing call on the telephone, be presented direct in the handsfree mode.

Operation

Digital Telephones

Outgoing calls

A call is initiated by:

- Pressing intercom key for relevant extension.
  Lamp flashes to confirm connection.
  Ring control tone is heard

On telephone with display, the following is shown:

EXECUTIVE Telephone

```
10 Jul 14:40   +15°
JOHNSON ANDREW            204  FREE
```

STANDARD Telephone

```
10 Jul 14:40   +15°
JOHNSON A    203  F
```

Incoming calls

A call is indicated by:

- Internal ring signal.
  If called party is busy on another traffic function only one muted ring burst will be received
- Lamp for intercom line lights and flashes rapidly

Calls via the intercom line are not indicated on the display before answer.

Answer

The call is answered by:

- Pressing intercom line key
- Lamp changes to connection flash
- Ringing ceases

On a telephone with display, the following is shown:

EXECUTIVE Telephone

```
10 Jul 14:40   +15°
JOHNSON ANDREW              204  SPEECH
```

STANDARD Telephone

```
10 Jul 14:40   +15°
JOHNSON A    203  S
```

Immediate answer

Only available on ECONOMYplus- ,STANDARD and EXECUTIVE Telephone.

If the intercom line has been programmed for immediate answer at the called extension, the call will be presented in the handsfree mode.

Both caller and called party hear a short tone whereafter speech connection is established.

Parking

A call on a intercom line can be parked individually by:

- Pressing key or another traffic function key. Lamp flashes slowly

The display on the telephone of parked party shows:

EXECUTIVE Telephone

```
10 Jul 14:40   +15°
JOHNSON ANDREW              203  PARKED
```

STANDARD Telephone

```
10 Jul 14:40   +15°
JOHNSON A    203  P
```

The parked intercom line is reaccessed by a further depression of the key.

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
		266/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved	Kontr/Checked	Datum/Date / Rev	Tillhör/Referens-File/Reference
		98-01-27 C	

Capacity

The number of intercom lines for each individual extension is limited only by the number of programmable keys.

- BASIC DBC 210 = 3
- ECONOMYplus DBC 211 = 4
- STANDARD DBC 212 = 4
- EXECUTIVE DBC 213 =14
- OPERATOR DBC 214 = 3
- KEY PANEL =17

Old telephones:

- BASIC DBC 199 = 0
- ECONOMY DBC 601 = 0
- ECONOMY DBC 751 = 0
- STANDARD DBC 631 =10
- STANDARD DBC 755 =10
- EXECUTIVE DBC 662 =30
- EXECUTIVE DBC 753 =30
- OPERATOR DBC 663 =20
- OPERATOR DBC 754 =20

Limitations

A call via a intercom line that has ongoing transfer to another party is moved to one of the traffic functions **Line 1**, **Line 2 *** or **Inquiry**.

If there is no free traffic function the transfer request will be ignored.

Immediate answer can only be programmed on the ECONOMYplus-, STANDARD and EXECUTIVE Telephone.

* not available on the BASIC Telephone

Programming

0301
To define keys

A prerequisite for the creation of a intercom line is that the relevant two parties have a key reserved for this purpose.

```
10 Jul 14:40   +15°
FUNCTION OF KEY       0301 xxxx yy    zz
 backward  forward     c/i      return
```

xxxx Enter extension's directory number

yy Enter relevant key (00 - 48)

zz Enter selected function = 14

Step to command 0302.

0302
State directory number

The other party's directory number must be stated

```
10 Jul 14:40   +15°
ASSOCIATED NUMBER     0302 xxxx yy  zzzz
 backward  forward     c/i      return
```

zzzz Enter other party's directory number

Step to command 0303.

0303
State type of ring signal

```
10 Jul 14:40   +15°
RINGING ALTERNATIVE   0303 xxxx yy     z
 backward  forward     c/i      return
```

z Enter required type of ring signal (0 - 5)

Repeat the procedure for the other party's telephone.

An intercom line can also be created via individual programming.

See document FACILITY DESCRIPTION (155 34-ASB 150 02 Uen).

Equipment

Digital Telephone.

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
SEA/TB/MP T.Preißner	SEA/TB/XE	267/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved	Kontr/Checked	Datum/Date / Rev	Tillhör/Referens-File/Reference
SEA/TB/MP		97-10-31 / B	ASB 150 02
		Database reference	
		267.fm	

INTRUSION

Definition

Intrusion denotes the possibility for an extension or OPERATOR who encounters busy, via a procedure, to intrude on the busy connection.

Use

The function is valuable for those who extend incoming external traffic.

The function gives the person extending the call the possibility to announce an important incoming call to a busy extension.

Operation

All telephones

To initiate intrusion

When busy is encountered, one dials the digit for the intrusion facility (normally "8") or a programmed name selection key.

On the EXECUTIVE Telephone the user may press menu key **intrusion**.

```
10 Jul 14:40   +15°
JOHNSON ANDREW          202      BUSY
call-back camp-on              intrusion
```

If the prerequisites for intrusion are complied with, the intruder will join the ongoing call as third party.

On a telephone with display, this will show:

EXECUTIVE Telephone

```
10 Jul 14:40   +15°
JOHNSON ANDREW          203    SPEECH
```

STANDARD Telephone

```
10 Jul 14:40   +15°
JOHNSON A    203  S
```

All parties hear warning tone throughout the intrusion (connection) phase.

NOTE: Intrusion can be prevented even if the menu text is shown, due to categorisation or because the traffic situation does not permit intrusion.

If the extension is not authorized to effect intrusion the key depression will be ignored and the extension user will continue to receive busy tone.

To end intrusion

When an intrusion ends, the seized speech paths are released via the conference circuit and the remaining parties continue their conversation via a normal speech (voice) channel.

Three cases are possible:

1. Intruder leaves call.
   Original conversation parties revert to normal two party call.
   Warning tone ceases.
2. Third party leaves call.
   Intruder and called party remain in normal call.
   Warning tone ceases.
3. Called party leaves call.
   Third party receives termination message.
   Called party is called by intruder as for normal internal call.
   Intruder hears ring control tone.

Capacity

Anyone with a facility category (COS) that includes intrusion can undertake intrusion.

Limitations

- Intrusion can only be effected on a party busy in a normal two party call
- None of parties in ongoing call shall possess a category that prevents intrusion
- Intruder must have facility category that includes intrusion
- There shall exist free connection paths in conference circuit.

Programming

0101
Assign facility category

An extension that is authorized to undertake intrusion must have a facility category that includes intrusion.

```
10 Jul 14:40   +15°
FACILITY COS          0101 xxxx       zz
 backward  forward     c/i      return
```

xxxx	Enter extension's directory number
zz	Enter relevant facility category (0 - 15)

3004
Program facility category list

```
10 Jul 14:40   +15°
INTRUSION             3004   xx        z
 backward  forward     c/i      return
```

xx	Enter facility category (0 - 15)
z	Enter relevant function: Y = Intrusion permitted. N = Intrusion forbidden (default data)

See also CATEGORISATION,
document 149/155 34-ASB 150 02 Uen.

0107
Protection against intrusion

If the extension position is to be protected against intrusion this needs to be programmed.

```
10 Jul 14:40   +15°
BREAK-IN ALLOWED      0107 xxxx        z
 backward  forward     c/i      return
```

xxxx	Enter extension's directory number
z	Enter relevant function: Y = Intrusion permitted (default data). N = Intrusion forbidden

These commands are only accessable via RASC:

1007
Intrusion (break in)

The command states whether or not intrusion shall be permitted during an ongoing call. However, intrusion is never permitted for data communications.

2406
Executive intrusion

If an extension encounters busy on a call to another extension, the extension can initiate intrusion by pressing a predetermined key.
This command is used to determine the digit to be used for intrusion.
Only extensions with a service category permitting initiation of intrusion are allowed to initiate (utilize) this facility. See command 3004.
Intrusion can only be executed, if the categories of both parties in the ongoing call permit intrusion. See commands 0107 and 1007.
If the digit has been used previously for another facility, it will be erased for this facility, i.e. the "old" facility will be removed from the system. See the other commands in this command group.

Equipment

None.

ISDN FACILITIES

Contents **Page**

ISDN FACILITIES 1

ISDN GENERAL 2

ISDN BASIC ACCESS
ISDN PRIMARY RATE ACCESS 3

ISDN S-INTERFACE 13

ISDN CALLER LIST 19

SUPPLEMENTARY SERVICE
DIRECT DIALLING IN (DDI) 24

SUPPLEMENTARY SERVICE
ADVICE OF CHARGE (AOC) 26

SUPPLEMENTARY SERVICE
CALLING LINE IDENTIFICATION
PRESENTATION (CLIP) 28

SUPPLEMENTARY SERVICE
CALLING LINE IDENTIFICATION
RESTRICTION (CLIR) 30

SUPPLEMENTARY SERVICE
CONNECTED LINE IDENTIFICATION
PRESENTATION (COLP) 33

SUPPLEMENTARY SERVICE
CONNECTED LINE IDENTIFICATION
RESTRICTION (COLR) 36

SUPPLEMENTARY SERVICE
MALICOUS CALL IDENTIFICATION
(MCID) 39

SUPPLEMENTARY SERVICE
MULTIPLE SUBSCRIBER NUMBER
(MSN) 42

SUPPLEMENTARY SERVICE
SUBADDRESSING (SUB) 44

ISDN GENERAL

DEFINITION

Integrated Services Digital Network, ISDN, is the definition of a digital telephone network according to CCITT. This network makes possible voice, video and data transmission on the same line.

For the connection of a PBX to the ISDN network, the user has two types of connection at his/her disposal, depending on the respective network operator.

ISDN Basic Access (BA ; 2B+D)

This access comprises 2 B-channels with a transmission rate of 64kb/s each, which are used for voice, video and data transmission, as well as one D-channel with a transmission rate of 16kb/s, which is used for signalling as well as data transmission.
The B-channels are completely independent and, in case of a PBX, may be seen as two independent trunk lines for external traffic.

ISDN Primary Rate Access (PRA; 30B+D)

This access comprises 30 B-channels, one synchronisation channel and one D-channel for signalling. As for a PBX, these 30 channels may be seen as independent trunk lines for external traffic.

ASB 150 02 supports the BA and PRA interface for connecting to public ISDN networks defined according to ACA (Australian Communication Authority) and ETSI (European Telecommunications Standard Institute).

ASB 150 02 offers also the possibility to connect ISDN terminals on the extension side.

S-Interface (2B+D)

This access enables the connection of up to eight logical data links (usually one per ISDN terminal) in passive bus configuration on the user side.

ISDN-terminals that are in compliance with the ACA (Australian Communication Authority) and ETSI recommendations (EURO - ISDN) as well as the country specific versions of the ETSI standard are supported on the S-interface.

USE

With its various features, ISDN opens the door to trend-setting functions, such as CTI (Computer Telephony Intergration) which are used in all types of industries.

The ISDN-features are called "supplementary services“. Which services are offered or available to the end user depends on the network operator.

PRA‘s, BA‘s and S-interface´s scope of services in ASB 150 02 includes “Basic Call“ and supplementary services.

You will find a detailed description in the following chapters.

OPERATION

See the following chapters

CAPACITY

See the following chapters

LIMITATIONS

See the following chapters

PROGRAMMING

See the following chapters

EQUIPMENT

BTU-D with ISDN prom set or BTU-B_ or MFU

ISDN BASIC ACCESS
ISDN PRIMARY RATE ACCESS

DEFINITION

The ISDN (PRA / BA) trunk lines of ASB 150 02 make possible the access to an ISDN network specified according to ACA, ETSI standards and also country-specific versions of the ETSI standard.

The PRA comprises 30 B-channels, one synchronisation channel and one D-channel. The BA comprises 2B channels and one D-channel.

In case of the BA, the ASB 150 02 system can be connected to the Network Terminator in a point to point or point to multipoint configuration

PRA's and BA's scope of services in ASB 150 02 includes “Basic Call“ and the following supplementary services.

- DDI Direct Dialling In
- AOC Advice of Charge
- CLIP Calling Line Identification Presentation
- CLIR Calling Line Identification Restriction
- COLP Connected Line Identification Presentation
- COLR Connected Line Identification Restriction
- MCID Malicious Call Identification
- MSN Multiple Subscriber Number
- SUB Sub-addressing

You will find a detailed description in the following chapters.

At first initialisation of the PBX, a directory number starting with 700 upwards is assigned to each trunk individual, according to the number of B-channels.

Compared to analogue trunks or digital CAS-lines there is normally no relation between the trunk individual and the B-channel (corresponds to the physical external line in the analogue world)

PRA's and BA's B-channels may be seen as independent trunk lines, although it is only possible to seize one outgoing direction.

USE

See OUTGOING EXTERNAL CALLS,
document 381/155 34-ASB 150 02 Uen,

and

INCOMING EXTERNAL CALLS,
document 262/155 34-ASB 150 02 Uen.

OPERATION

See OUTGOING EXTERNAL CALLS,
document 381/155 34-ASB 150 02 Uen,

and

INCOMING EXTERNAL CALLS,
document 262/155 34-ASB 150 02 Uen.

CAPACITY

The maximum number of trunk lines is determined by the number of speech channels in the system (60).

32 different public numbers can be assigned to the trunks. Up to 16 digits can be programmed per public number.

LIMITATIONS

Transit traffic to another trunk line (ISDN or analogue) is allowed but no ISDN facilities are supported.

Supplementary services are always valid for the complete link.

In case of outgoing traffic it is possible in ASB 150 02 to create groups of channels for defined purposes (e.g. tenant groups) but it depends on the national network operator if this is also supported.

In case of incoming traffic it is not possible to assign B-channels to specific groups. If special applications like ACD-groups require dedicated trunk resources a complete link (PRA or BA) has to be used without DDI subscription.

PROGRAMMING

Recommended programming procedure

* Program the individual link
* Program one route at a time
* Program one line in the route and copy its data to the other lines of the link.

Commands for the individual link

The command group 19 refers to the respective selected trunk board and individual link
(BTU-D = 1 link , BTU-B_ = 8 (4) links; MFU= 4 links)

1910
Basic Access mode

This command is used to specify the type of Basic Access connection mode.
At connection to S - interface user mode is valid.
At connection to T - interface network mode is valid.
At connection to Q - interface network mode is (Q - reference point)valid.

NOTE: The selected type of connection has to correspond to DIP switching of interface type on BTU-B_/MFU board.

Valid data: USER (-S)
NETWORK (-T)
NETWORK (-Q)

Default data : NETWORK (-T)

1911
Network selection

This command states to which ISDN network the BTU-D/BTU-P will be connected.

- Country specific settings

1912
Termination in ASB 150

The command is used to define the network termination for the current ISDN-link. It specifies the operation mode for layer 1,2 and 3 as well as the link synchronisation and the actions in case of call collision and error conditions. There are four choices:

Termination	*Remote*	*Synchronisation*
USER	public	slave
USER	private	slave
NETWORK L1slave	private	slave
NETWORK L1master	private	master

Connetion to a public network:
The link shall always be defined as "User in public network".

Connection to a private network:
If the opposite side is configured as network then the link shall be defined as "user in private network".

If the opposite side is configured as user then the link shall be defined as "Network - layer 1 sync master".

If the link is connected via routers (or other equipment) , that are layer 2 and layer 3 transparent but layer 1 sync master, to the oppsite side, then the link shall be set as "Network - layer 1 sync slave" (in both systems)

Valid data: User to public network
User to private
Network L1master to private
Network L1slave to private

Default data : User to public network

1913
B-channel selection mode

This command states the rules for seizure of a B-channel for outgoing calls and defines whether there shall be a relation or no relation between the B-channels and the individual trunk number.

Valid data: No local channel selection
Preferred selection
Exclusive selection
- linked to trunk individual
Exclusive selection

Default data for BTUD is:
Preferred selection

Default data for BTUB/MFU is:
No local channel selection

No local channel selection
BTU-D/BTU-B_/MFU leaves it to the opposite side to select a B-channel. There is no relation between the individual trunk number and the B-channel.

Preferred selection
BTU-D/BTU-B_/MFU informs the opposite side which B-channel to use, it accepts, however, also another B-channel proposed by the opposite side. There is no relation between individual trunk number and B-channel.

Exclusive selection
- linked to trunk individual
BTU-D/BTU-B_/MFU informs the opposite side to use a determined B-channel and does not accept any other. In this setting, there is a fixed relation between individual trunk numbers and B-channel for incoming and outgoing traffic. In conjunction with this setting it is possible to create groups of channels for defined purpose (e.g. tenant groups, ACD group).

Exclusive B-channel selection
BTU-D/BTU-B_/MFU informs the opposite side to use a determined B-channel and does not accept any other.

There is no relation between individual trunk number and B-channel.

1916
Digit receiving in overlap mode

This command defines how the direct in-dialling digits are received by the public network.

Valid data: Yes / No

No
No overlap mode (en-block mode)
All direct in-dialling digits are received together in the "call setup message " .

Yes
Overlap mode
Direct in-dialling digits are received in separate messages.

1919
Assigned TEI value

For addressing purposes each ISDN equipment connected to an ISDN-link requires a TEI value (Terminal Endpoint Identifier).
This TEI value is included in all the messages which will be sent to the public network or received from the public network.
How the TEI value is assigned depends on the network provider, either there will be a fixed stipulation which TEI value has to be used (non automatic assignment) or the ISDN equipment requests a TEI-value from the public net (automatic assignment) when it is connected to an ISDN-link the first time.
This TEI-value will be stored and used for all further messages to and from the public network. In the maintenance part of RASC under menu "SYSTEMS" and item "LINK SUPERVISOR" you can display the actual stored TEI value, which in case of non-automatic assignment will be the same as selected for command 1919, or in case of automatic assignment, a value which was assigned by the public network.

The automatically assigned value might change, when the public net removes the actual TEI value for undefined reasons and assigns a new one.

Valid data: 00 - 63 for non automatic assignment
-- for automatic assignment

Default data: -- (undefined)

1920
CRC4 check

This command is used to define the mode of Cyclic Redundancy Check (CRC4) for ISDN Primary Rate Access (PRA).
CRC-4 procedure for multiframe alignment and bit error monitoring is designed to supervise if frame alignment has been lost and if the bit error rate is within a specified range.
There are two modes of operation:

Automatic - The equipment adapts itself to the operation of the network. This will be used in most markets.

Permanent - This is used when the network does not support the automatic function.

Valid data:
0 =Automatic selection (by layer 1)
1 =CRC4 proc. permanently enabled
2=CRC4 proc. permantently disabled
3=market dependent parameter *

Default data: 3

* This value is related to the value of command 1911.

1921
Ignore inband info

This command states whether inband information, which is available after disconnect, shall be ignored and immediate call clearing shall be initiated, or if the inband information shall be transmitted to the user.

Valid data: Yes/No

No
Inband information is ignored
(the call is immediately released)

Yes
Inband information is not ignored
(the user receives the inband information)

Default data: Yes

1946
Message after timeout.

This command states whether a CONNECT or ALERTING message shall be sent 8 seconds after CALL PROCEEDING to the network. This function is not used when the systems answers with one of the above mentioned messages within 8 eight second .
The function iis used to stop the ISDN timer T303 and forces the originating network to through connect the B-channel in order to give the caller the possibility to hear tones or announcements provided by the terminating party.

Valid data:
No
Connect
Alert

Default: Connect

The choice of CONNECT or ALERTING is network dependent.

Supplementary Services

You may find a detailed description of the following commands in the respective description of the supplementary service.

1914
Subscribed charging method (see chapter AOC)

Valid data: AOC not subscribed
AOC - D subscribed
AOC - E subscribed
AOC permanently subscribed

1915
Calling line presentation on
(see Supplementary Service CLIP)

Valid data: Yes / No

1917
MCID subscribed
(see Supplementary Service MCID)

Valid data: Yes / No

1918
Connected line presentation on
(see Supplementary Service COLP)

Valid data: Yes / No

Command for individual trunk numbers

Numbering

5605
Assign directory number to the line position

5606
Change directory number for individual trunk line

5607
Assign all trunk lines a new number series.

Categorisation

1001
Facility COS

Define the class of service the trunk should belong to.

Valid data: 0-15

1002
Traffic group.

The traffic group matrix defines to which trunks and extensions the trunk can be connected (see commands 2301-2315).

1003
TCD-COS day

Trunk-call-discrimination class of service.

During the day

Valid data: 0-15

1004
TCD-COS night

Trunk-call-discrimination class of service in night switching mode

Valid data: 1-8

1005
Common abbreviated number COS.

Valid data: 0-3

1006
Callback towards trunks allowed?

States whether it is permitted to program an automatic callback to the trunk line.

Valid data: Yes / No

1007
Break-in allowed?

States if intrusion is permitted on that trunk.

Valid data: Yes / No

1008
Camp-on answer position?

Defines if calls from that trunk automatically camp-on to the called extension in case of busy.

Valid data: Yes / No

1020
Pickup of parked trunks?

States whether pickup of a parked trunk is only allowed via a programmed trunk key (value = no) or also via dialling a procedure (value = yes).

Valid data: Yes / No

1022
Voice info to trunk allowed?

States whether it is allowed to send voice information to the public network.

Valid data: Yes / No

Night service

See also NIGHT SERVICE.

1019
Night switching group.

States the night switching group for the trunk.

Valid data: 1-8

Outgoing Traffic

1013
Dial tone to extension?

Defines whether a dial tone shall be sent after dialling the route-access number.

Valid data: Yes / No

1014
Result tones to connected exchange?

Defines whether or not the result tone shall be sent to the public exchange.

Valid data: Yes / No

1015
Predigits for TCD and LCR.

The command assigns a number to routes. This number is used as predigits for TCD and LCR.

1018
Subsystem to PBX (only prepared)

This command states whether the ASB 150 02 is connected to another PBX. If it is, the outgoing call will not be checked by the TCD.

Valid data: Yes / No

1307
PTS-signal from PE?

States whether the public exchange supplies a PTS signal.

Valid data: Yes / No

1308
PTS-signal from PE is dial tone?

States whether the PTS signal from the public exchange comprises dial tone.

Valid data: Yes / No

1410
Time for recall on camp on.

States the time before a camped-on call recalls the transferring party.

Valid data: 0 -255 sec

Incoming traffic

1101
Answering position at day.

Should not be programmed in conjunction with DDI.

1102
Answering position at night.

Should not be programmed in conjunction with DDI.

1103
Reroute position at day.

This is where unanswered external calls are routed during the day.

1104
Reroute position at night.

This is where unanswered external calls are routed during the night switching mode.

Direct in-dialling

For further information see Supplementary Service DDI.

1009
Reroute on answer position barred?

1010
Reroute on answer position blocked?

1011
Reroute on answer position vacant?

1012
Reroute on answer position busy?

1016
Reroute on no answer?

1017
Reroute on too few digits received?

1023
Type of trunk

The command is used to state to which type of trunk the BTU is connected.

1030
Public number group

The command is used to assign a public number group to the trunk. This value defines which of the 32 public numbers (command 2220) should be used to create the number to be sent to the network on request.

1309
PTS-signal to PE is dial tone?
Time-out adjustments for digit reception.

1411
Time supervision for the first digit in case of automatic incoming traffic.

1412
Time supervision between digits in case of automatic incoming traffic.

1413
Supervision time for answer in case of automatic incoming traffic.

1801
Incoming common number at automatic incoming traffic

The command is used to state the incoming number that is be translated to the answer position for the line. Furthermore this number is used to build up the public number that is sent out to the line as A (calling) or B (called / connected) number in cases where the internal number is not subscribed in the public network.

Valid data: 1 - 4 digits

EXAMPLE:
Digits 000 are received from the line, which means that the call shall go to the answer position for the line (Operator) in accordance with command 1103 and 1104. The special analysis in accordance with commands 1801 and 1803 is needed as digit 0 is used internally in the exchange.
Assume the extension number series consists of a 3-digit number beginning with digit 2 and from the line a 3-digit number beginning with the digit 0 is received.

In that case the following settings are required:

1803	1	Remove leading digit
1802	2	Add the digit 2 to the remaining part of the received number
1801	200	Incoming common number which should call the answer position programmed with commands 1103 (day time) and 1104 (night time).

1802
Predigits at automatic incoming traffic.

1925-1935
ISDN number plan and number types

The "ISDN number plan" defines, depending on the dialled number (number type) by the A-party, how many digits have to be ignored, according to the E.164 or a private number plan so that only the direct in-dialling digits for the B-party remain.

(For further information see
ISDN SUPPLEMENTARY SERVICE DDI)

Monitoring Times

Time-out adjustments for digit transmission

The maximal inter-digital pause (the time between digits) for outgoing digit transmission can be defined. After a programmable amount of digits a short monitoring time can be defined.

Time-out adjustments for call handling

1406
Wait time before ring-back or re-routing at not answered calls.

Valid data: 0 -255 sec

1407
Maximum hold time

States time before a call that cannot be re-routed (parked for general access) is disconnected.

Valid data: 0 -255 sec

1408
Minimum call duration time for not incrementing the disturbance counter.

Valid data: 0 -255 sec

1409
Time for recall on transfer before answer.

States time before a call transferred before answer recalls the transferring party.

Valid data: 0 -255 sec

Digital link parameters

The following commands are valid for all configured ISDN system connections.

2060
Consolidation time from alarm to OK

The system continuously monitors the existing ISDN connections. In case that one ISDN connection fails for undefined reasons, an internal alarm will be raised. Command 2060 states for how long the ISDN connection has to work correctly again in order to cancel the alarm condition.

Valid data: 0 - 255 sec

2061-2065
First to fith priority link to be master for synchronisation

Commands 2061-2065 state which digital interface (board position / individual link) shall be used first for synchronisation and which others shall be used if the first one fails. If a synchronisation source is defined, and connected to a co-operating exchange,
ASB150 02 acts as "slave" and always takes over the clock of the "master". This synchronisation strategy is designed for 5 different sources. If no BTU-D/BTU-B_/ MFU is stated for synchronisation, the internal system clock will be the master. This is used in case of a tie line configuration.

In a tie line configuration one PBX has to be always configured as "master" and the other one as "slave".
If the system is connected to the public network, it always acts as a slave and takes over the clock from the public network.

Number analysis

In this command group the exchange's national significant number will be defined to be used for the supplementary service CLIP and COLP.
(Depending on the configuration of the following commands ASB 150 02, sends out either the complete national significant number, the subscriber number or only the directory number of the called or calling extension).

According to the CCITT numberplan E.164 the national significant number comprises the national destination code and the subscriber number.

The subscriber number comprises the public access number + directory number of the connected or calling extension.

ASB 150 02 creates the national significant number by connecting the defined digits from command 2220 + directory number of the connected or calling extension.

2220
Public directory numbers

This command sets the public directory numbers for the 32 public number groups. The numbers are used in applications for which the public number and/or the length of the public number must be known.

The number is also used in applications for which the internal extension numbers in the public network must be known. The extension numbers will then be built by taking the corresponding public number from the table (see command 1030 Public Number Group) and adding the internal directory number to the programmed number.

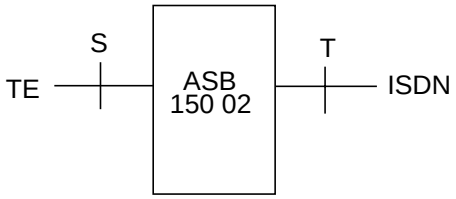
EQUIPMENT

BTU-D with ISDN prom set or BTU-B_ or MFU

ISDN S-INTERFACE

DEFINITION

A S-interface offers the possibility to connect ISDN terminals on the user side.



Terms:

ISDN Integrated Services Digital Network

S S-reference point, user side
(= 2B+D user interface
= S - interface)

T T-reference point, network side
(= 2B+D network interface
or 30B+D network interface
= T - interface)

TE Terminal Equipment
e.g. Telefax G4
PC with ISDN board
PC with ISDN board and telephone
Terminal adapter
Videophone
ISDN telephone

As regards ISDN-telephones, only basic functions concerning voice communication are supported. Therefore, we recommend to continue to use the proprietary digital system telephones (DIALOG 3000).

USE

ISDN-terminals that are in compliance with the ACA (= Australian Communication Authority), ETSI (= European Telecommunications Standards Institute) recommendations (EURO - ISDN) and also country specific versions of the ETSI standard are supported on the S-interface:

- ISDN Telefax G4
- ISDN PC cards
- ISDN LAN cards
- ISDN Terminal adapter
- ISDN Videophones
- ISDN telephone
- ISDN Personal Conferencing Video Systems (e.g. Intel Proshare)

The main purpose/application is to support data and video transmission in temporary "dial-up" connections using the public ISDN capabilities.

It is NOT intended for in-house PC networks.
For this purpose, a PC-LAN meets the requirements (data rates far higher than 64kbps as provided on an ISDN - B channel) much better than an ISDN-connection via a PBX.

OPERATION

Two types of bus configurations for different requirements are possible for the S-interface:

- point-to-multipoint - short passive bus
- point-to-multipoint - extended passive bus

Point-to-multipoint is a user access supporting more than one logical data link (usually one per ISDN terminal) by a single network termination.

The difference between a short passive bus and an extended passive bus is on the one hand the line length and on the other hand the location of the TEs on the bus.

NOTE: For more information, see document 1531 - BDV 113 08 Uen

The following bearer services are supported at the S-Interface:

Definition of "bearer":
A bearer is a type of telecommunication service that provides the capability for the transmission of signals between two ISDN interfaces.

Circuit mode (64 kbps)

- Speech
- Unrestricted digital information
- Unrestricted digital information with tones/ announcements (7 kHz)
- 3.1 kHz audio
- Video

Packet mode through the B-channel (64 kbps)

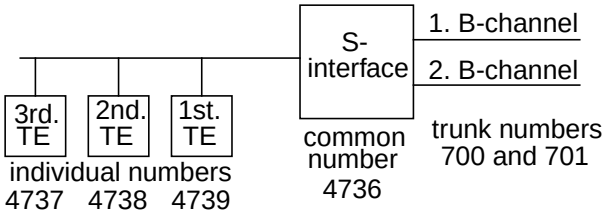
General information concerning the numbering plan of the S-interface

Each S-interface and each connected ISDN terminal supporting its own MSN (= Multiple Subscriber Number) require a directory number in the system.

These ISDN directory numbers will correspond to route access numbers, normally used for trunk routes.

The S-Interface can only have one common directory number assigned.
The TEs can have one or more MSN assigned (depends on the terminal).

Example:
4 route access numbers, corresponding to
1 S-interface => 1 common number
3 TE => 3 individual numbers = 3 MSN



The "individual number" = MSN for the second TE is e.g.: 4738

The S-interface and all connected TEs use the same trunks, e.g.: trunk numbers 700 and 701.
This means that the S-interface and all connected TEs are assigned to the corresponding route numbers in which these trunks (700 and 701) are included.

Facility overview:

The following features are supported at the S-interface:

Supplementary services (according to ETSI):

Which supplementary services are provided to the S-interface depends on the subscription of supplementary services from the public network provider as well as on the programming of the T- and S- interfaces.

For more informations concerning each topic, see the relevant chapter in this document

- AOC services
  - permanent AOC-D
    (=Advice Of Charge, During the call)
  - permanent AOC-E
    (=Advice Of Charge, at the End of the call)
- CLIP (=Calling Line Identification Presentation)
- CLIR (=Calling Line Identification Restriction)
- COLP (=Connected Line Identification Presentation)
- COLR (=Connected Line Identification Restriction)
- MCID (= Malicious Call IDentification)
- MSN (= Multiple Subscriber Number)
- SUB (= SUBaddressing)

.

BusinessPhone proprietary system features:

- Abbreviated dialling - Common numbers
  This means that the number of an internal or external destination is stored in the memory and called by dialling the abbreviated number.
- Rerouting on busy
  Rerouting on busy means that, if an ISDN terminal cannot be reached (e.g. both trunks are busy on the interface), any alternative route destination(s) can be used as "diversion position".
- CIL (= Call Information Logging)
  Stored data is:
  - calling number
    (common number of the S-interface or the MSN of the individual TE)
  - called or connected number,
    connected number (if provided) overrides called number
    (This facility is only applicable for calls to a S-interface)
- CM (= Call Metering)
  Information on call charges will be stored.
- LCR (= Least Cost Routing)
  Least Cost Routing selects the most economic carrier for an entered destination number.
- Music on hold
  TE waiting in park state will receive music or other recorded information either during transfer procedure only, or until speech connection is established.
- System time
  Date and time is provided to the TE.
  Supported info is:
  year, month, day, hour, minute.

CAPACITY

The capacity of TEs refers to the total capacity of extensions in ASB 150 02, consisting of analogue telephones, system telephones and ISDN terminals (see document 1555 - ASB 150 02).

A maximum of 250 route numbers may be configured in the system (including all individual and common numbers).

Up to eight logical links may be connected to the S-interface.

8 (4) S-interfaces per BTU-B_ board.
4 S-interfaces per MFU board

Max. 24 S-interfaces per system.

LIMITATIONS

The sum of analogue trunks, tie lines and number of B-channels on digital trunks and S-interfaces is limited to 120 individuals.

Only 2 TEs per ISDN link can be powered via the ASB 150 02 (see Installation Instructions).

No packet switching on the D-channel is supported.

Only incoming and outgoing calls can be handled by ISDN telephones. No Inquiry call or transfer can be done from these telephones.

Calling the S-interface, it is not possible to use the Call back function.

Calling the S-interface, it is not possible to use the Notify function on the OPERATOR console.

Intrusion is not accepted by the S-interface.

There is no possibility to use a S-interface as a Diversion- or Follow me- address.

If an incoming ISDN call with a bearer service higher then "speech" (i.e. "data") has been accepted by the destination, no rerouting to a second destination is allowed.

PROGRAMMING

The following commands are only accessible via RASC:

HINT: The selected type of connection (T-interface or S-interface) has to correspond to DIP switching of the interface type on the BTU-B_/MFU board. If the DIP switching does not correspond to the selected type of interface, a warning will be generated. (see Installation Instructions)

5401
Create route

This command is normally used to create a trunk route.
In case of the S-Interface, the command is used for defining the common directory numbers of the interfaces as well as the MSN numbers of the connected TEs.

3201
Route members

This command is used for defining the individual trunk numbers, which are members of the route of the common directory number for the S-interface as well as the MSN numbers of the connected TEs.

3304
Alternative route choice 1

3306
Alternative route choice 2

These commands state the alternative routing of an incoming call to an S-Interface or ISDN terminal in case of busy. Two different alternative answer positions may be programmed, which can only be another S-Interface or another ISDN terminal from another S-Interface.

1801
Common number at automatic outgoing/incoming traffic

The command is used to state the incoming number that is to be transferred to the answering position for the line. Furthermore this number is used to build up the public number that is sent out to the line as A (calling) or B (called/connected) number in cases where the internal number is not subscribed in the public network.

Valid data: 1-4 digits

The following commands have to be programmed, if "ISDN-link user interface (-S)" has been selected:

1951
Basic Access mode

These commands are used to specify the type of Basic Access connection mode.
At connection to S - interface user mode is valid.
At connection to T - interface network mode is valid.

NOTE: The selected type of connection has to correspond to DIP switching of interface type on BTU-B_/MFU board.

Valid data: USER (-S)
NETWORK (-T)

Default data : NETWORK (-T)

NOTE:
The commands 1910 and 1951 must always state the same valid data !

1952
User according to

This command states the current ISDN protocol to be used on the interface. It is possible to store various, market-dependent ISDN protocols. The parameter defines the selection of the current protocol to be used.

Default data: ETSI
(as for T-interface dedication)

NOTE: Market variants are options for the different markets and are prepared for future use.

1953
Type of bus

This command states the type of bus being connected to the interface.

Valid data:	0	short passive bus
	1	extended passive bus

Default data: 1

1954
Charging information provided to the TE ?

This command states whether or not charging information is provided to the terminals on the interface. The type of charging (AOC (= Advice Of Charge)) is defined by T-Interface parameters. If it is not provided, the charging information will not be sent to the terminal.

Valid data:	No	AOC is not provided
	Yes	AOC is provided

Default data: No

1955
MCID allowed by the TE ?

This command states whether MCID (= Malicious Call IDentification) is allowed by the terminal user(s) on the interface.

Valid data:	No	MCID is not allowed
	Yes	MCID is allowed

Default data: No

1956
MSN provided ?

This command states whether MSN (= Multiple Subscriber Number) is provided by the terminal user(s) on the interface.

Valid data: No MSN is not provided
Yes MSN is provided

Default data: NO

NOTE: This feature can only be used, if the ISDN-terminals are programmed also with the MSN !

1957
Number secrecy allowed ?

This command states whether the terminal user(s) are allowed to restrict the presentation of the own calling / connected party number in the network.

Valid data: No Restriction not allowed
Yes Restriction allowed

Default data: No

1958
Common access number

This command states which of the dedicated route number(s) for this interface is the common access number.

Valid data: 1-4 digit numbers, corresponding to the route number

Default data: none

NOTE The selected route must be created first !

1959
Assigned TEI values

This command states the non-automatic TEI (= Terminal Endpoint Identifer) values for the S-Interface. Max 8 TEI values per interface can be defined.

Default data: none

EQUIPMENT

The BTU-B_/MFU can be used either for the T- or the S-interface.

Regarding the DIP switches following configurations are possible on:

BTU-B_:

- 0 T-interface, 8 S-interfaces
- 2 T-interfaces, 6 S-interfaces
- 4 T-interfaces, 4 S-interfaces
- 6 T-interfaces, 2 S-interfaces
- 8 T-interfaces, 0 S-interface.

MFU:

- 0 T-interface, 4 S-interfaces
- 1 T-interfaces, 3 S-interfaces
- 2 T-interfaces, 2 S-interfaces
- 3 T-interfaces, 1 S-interfaces
- 4 T-interfaces, 0 S-interface.

ISDN CALLER LIST

DEFINITION

The ISDN caller list enables an authorised user of a system telephone to store in his/her own caller list incoming DDI ISDN calls, which could not be answered because of absence or busy.

USE

By storing unanswered calls in the system, e.g. in case of no answer or busy, this function will ensure that no incoming ISDN calls to system telephones will be missed.

Via the telephone the following activities can be performed when calls are stored in the caller list:

- Read-out of the number of unanswered calls
- Scrolling through the caller list
- Calling the stored numbers in the caller list
- Read-out of time and date of incoming calls
- Read-out of the number of attempts for an incoming call
- Erasing of calls from the caller list

OPERATION

If calls are stored in the caller list, the user can scroll through the list in order to decide which number he/she wants to call back. The ISDN calling party numbers are stored chronologically according to their arrival.

If the list is full, each further unsuccessfull incoming call will delete the oldest call in the list (first in - first out - principle).

Callers which are calling several times are stored in the caller list as a single entry, with the latest arrival time and a counter showing the number of call attempts.

Storage criteria:

The criteria for the storage of an unsuccessful ISDN DDI call in a callers list are the following:

- The minimum ringing time at the extension must be more than 3 seconds.
- The calling party number must be provided by the public network.
- The extension must be the one desired one by the DDI call.
- The extension must be the first call destination in the system. (Already answered and transferred calls are not stored in the caller list)
- If the desired extension has activated a call diversion (follow me, direct, busy or no reply), the incoming ISDN call is only stored at the diverting extension if the diversion address does not answer the call. The minimum ringing time at the diversion address must also be more than 3 seconds.
- If the desired extension does not answer within the trunk reroute timeout, the incoming ISDN call is stored in the caller list independent of whether or not the call will be answered by the reroute position of the trunk.
- If the desired extension is busy, the incoming ISDN call is stored in the caller list independent of whether or not the call will be answered by the reroute position of the trunk.

Storage principle

In case of an incoming ISDN call using numbering plan E164, the following call number types can be received for the calling party in the call set-up message.

- Unknown
- National
- International
- Network specific
- Local directory

If the received calling party number is of type "national" or "international", the calling party number has to be complemented with the respective prefixes stated in commands 1936 and 1937 and stored in the caller list.

Calls covering other call number types than "national" or "international" are stored as they are received.

Executive Telephone

The number of calls in the list are indicated on the display, e.g. "10 CALLS" indicates that 10 calls are stored in the list.

```
10 Jul 14:40   +15˚
PLATTNER MICHAEL          4736    10 CALLS
directory    list      redial        prog
```

To display the first entry in the caller list:

`list`	Press (see display)

The display shows the first entry in the ISDN caller list:

```
10 Jul 14:40   +15˚
00431811005446                  CALL  1/10
call       next          time        erase
```

call.....calling the stored number
next..... scrolling through the list
time..... read out date and time of arrival and number of call attempts
erase..... delete stored number

Calling the stored number

`call`	Press to call the selected number (see display)

```
10 Jul 14:40   +15˚
               000431811005446
                         save
```

If no default route number is programmed, the user has to enter the number manually. For more information, see "Error Messages" in this chapter.

Scrolling through the list

`next`	Press to scroll through the list (see display)

```
10 Jul 14:40   +15˚
00431811005452                  CALL  2/10
call       next          time        erase
```

Read out time of arrival and number of call attempts

`time`	Press to read out date, time and number of call attempts of the selected call (see display)

```
10 Jul 14:40   +15˚
CALL RECEIVED ON:      31 JAN 15:10     1x
                                      return
```

Delete stored number

erase	Press to erase the selected call (see display)

The next entry in chronological order is shown:

```
10 Jul 14:40   +15°
             00431811005452      CALL  1/9
call       next          time         erase
```

Standard Telephone

The number of calls in the list is indicated on your display, e.g. "C10" indicates that 10 calls are stored in the list.

```
10 JUL 14:40  +15°
PLATTNER M   4736  10C
```

To display the first entry in the caller list:

✳ 4 8 #	Press

The display shows the first entry in the ISDN caller list:

```
00431811005446      1C
next:+         erase:-
```

"L1"..... calling the stored number
"+"..... scrolling through the list
"0"..... read out time of arrival and number of call attempts
"-"..... delete stored number

Calling the stored numbers

Line 1	Press to call the selected number

```
10 Jul 14:40   +15°
00431811005446
```

If no default route number is programmed, the user has to enter the number manually. For more information, see "Error Messages" in this chapter.

Scrolling through the list

+	Press to scroll through the list

```
00431811005452      2C
next:+         erase:-
```

Read out time of arrival and number of call attempts

0	Press to read out date, time and number of call attempts of the selected call

```
31 JAN 15:10       1x
RETURN:0
```

Delete stored number

Press to erase the selected call

The next entry in chronological order is shown:

```
00431811005452    C 1
next:+        erase:-
```

Error messages

No default route directory number of the currently used extension:

```
10 Jul 14:40   +15°
ENTER ROUTE NUMBER:
 call                          return
```

The user has to enter the route directory number manually. The number consists of up to 4 digits and is completed by pressing the #-key or the ENTER-key.

This kind of programming can be used for configurations where the user wants to use different routes, e.g. for business and private calls.

If an invalid route directory number is entered, the following error message will be shown:

```
10 Jul 14:40   +15°
INVALID ROUTE NUMBER
```

Common error messages:

- The last entry in the list was erased or *48# was dialled although the list is empty:

```
10 Jul 14:40   +15°
NO ENTRIES
```

- Tandem configuration:
  The following message is shown on the display to inform that the other member of the tandem configuration is retrieving the ISDN caller list:

```
10 Jul 14:40   +15°
FUNCTION BUSY - TRY LATER
```

- More than 192 extensions are programmed with an ISDN caller list:

```
10 Jul 14:40   +15°
OUT OF RESOURCES
```

- A system error has been detected (e.g. timer cannot be triggered)

```
10 Jul 14:40   +15°
ERROR
```

- Timeout occurs (Default data: 30 sec.)

```
10 Jul 14:40   +15°
TIMEOUT
```

CAPACITY

Up to 192 authorised DBC753, DBC662, DBC213 and DBC212 extensions can store unsuccessful ISDN DDI calls from the public ISDN network.

Per extension a maximum of 10 entries can be stored in the caller list.

LIMITATIONS

- The following telephone types cannot have an ISDN caller list:
  - OPERATOR's Console
  - ACD Agent
  - ACD Supervisor
  - Analogue telephone
  - Digital telephone types without display
- Tandem configuration:
  For an ISDN caller list to be assigned, at least one extension - master or slave - must be an EXECUTIVE/STANDARD phone, irrespective of whether or not the slave is logged on.
- No caller list entries for Group (PBX)-Hunting calls with parallel distribution.
- In the following traffic cases, the number of callers in the caller list is not shown in IDLE state:
  1) Follow me.
  2) Direct diversion.
  3) Diversion on busy.
  4) Extension is an ACD agent.
- Concerning "Diversion direct", "Diversion on no reply", "Diversion on busy" and "Follow me", the ISDN calling party number is stored for the first called party.
  If the programmed diversion or follow-me extension answers the ISDN call, no storage of the ISDN calling party number takes place.
- The maximum number of call attempts which can be shown on the display is 99. Even if there are more than 99 call attempts for one number, only "99" will be shown.
- Disconnecting an authorised DBC753, DBC662, DBC213 and DBC212 extension, stored ISDN calls will be deleted.

PROGRAMMING

0178
ISDN caller list allowed

This command defines whether a specified extension is allowed to have an ISDN caller list.

Default data = YES

6803
Tenant Route

This command is used to define for each tenant group the default trunk route which shall be seized when a call is set up from the caller list.
If no trunk route is entered, the user will always be requested to define the trunk route for the outgoing calls.

Default data = Empty

1936
International prefix to be included

Specifies the prefix code for international calls. The prefix is included as predigits to the received calling/ connected party number from the ISDN network.
On system phones the complete number is displayed.

Valid data: 1-4 digits

1937
National prefix to be included

Specifies the prefix code for national calls. The prefix is included as predigits to the received calling/ connected party number from the ISDN network.
On system phones the complete number is displayed.

Valid data: 1-4 digits

EQUIPMENT

STANDARD or EXECUTIVE Telephone

A FECU at least for BP 250/50 Version 3 must be connected to the CPU-D4.

SUPPLEMENTARY SERVICE DIRECT DIALLING IN (DDI)

DEFINITION

The supplementary service DDI enables a user to call directly via a public ISDN a user in a private ISDN by using the public ISDN numbering plan

For more information see “DIRECT IN-DIALLING“, document 162 / 155 34 - ASB 150 02 Uen.

USE

ASB 150 02 handles DDI calls from a public ISDN in the same way as those from an analogue network.

See “DIRECT IN-DIALLING“, document 162 / 155 34 - ASB 150 02 Uen.

OPERATION

See “DIRECT IN-DIALLING“, document 162 / 155 34 - ASB 150 02 Uen.

CAPACITY

See chapter “ISDN Basic Access / Primary Rate Access“ in this document.

LIMITATIONS

See “DIRECT IN-DIALLING“, document 162 / 155 34 - ASB 150 02 Uen.

PROGRAMMING

1009
Reroute on answer position barred?

Defines rerouting to reroute position if the desired direct in-dialling number is barred.

1010
Reroute on answer position blocked?

Defines rerouting to reroute position if the desired direct in-dialling number is blocked because of a fault.

1011
Reroute on answer position vacant?

Defines rerouting to reroute position if the desired direct in-dialling number does not exist in the system.

1012
Reroute on answer position busy?

Defines rerouting to reroute position if the desired direct in-dialling number is busy.

1016
Reroute on no answer?

Defines whether calls shall be rerouted if the desired extension does not answer. (See also commands 1103 and 1104.)

1017
Reroute on too few digits received?

In case of no answer the call will be re-routed to the rerouting position after timeout.

1023
Trunk line type.

The command states which type of trunk is connected (public exchange, public exchange with direct in-dialling, tie line to another exchange). This command defines for example if the ringing cadence for internal or external calls shall apply.

Valid data: 0-2

Deafult value: 1 for DDI

1309
PTS-signal to PE is dial tone?

The command states whether the PTS signal for incoming traffic consists of dial tone

Valid data: Yes / No

This command group defines how the received number is adapted for further analysis

1801
Incoming common number at automatic incoming traffic.

This command is used to state the incoming number that shall be translated to the reroute position for this line (e.g. operator).

1802
Predigits at automatic incoming traffic.

Predigits for incoming number. The command states the digits to be inserted as prefix to the incoming number before it is analysed.
Time-out adjustments for digit reception

1411
Time supervision for the first digit in case of automatic incoming traffic.

Valid data: 0-255 sec

1412
Time supervision between digits in case of automatic incoming traffic.

Valid data: 0-255 sec

1413
Supervision time for answer in case of automatic incoming traffic.

The call will be rerouted to the alternative answering position in case of no answer.

Valid data: 0-255 sec

1925 - 1935
ISDN number plan

At incoming calls there are two ways of receiving the direct in-dialling digit.

Overlap mode: The direct in-dialling digits will be received in separate messages.

En-bloc mode: The DDI digit's are received in the call-setup message.

In both cases, the type of the called party number is included. The following number types exist in the E.164 number plan:

Subscriber The digits received comprise the public subscriber number.

National The digits received contain public destination code, and the subscriber number.

International
The digits received contain country code, public destination code and subscriber number.

Unknown Only direct in-dialling digits are received

Network specific
The content of the digits received depends on the respective network operator.

The "ISDN number plan ", depending on the dialled number, defines how many digits have to be ignored, so that only the direct in-dialling digits remain.

Note: It depends on the network operator, which type of number is used.

All other parameters for a "private number plan" are already prepared, but not yet in function.

EQUIPMENT

BTU-D with ISDN prom set or BTU-B_ or MFU

SUPPLEMENTARY SERVICE ADVICE OF CHARGE (AOC)

DEFINITION

If this service is subscribed to at an outgoing call, currency or charging units are sent to the exchange, depending on the respective network operator. Three different types of how the currency or charging units are sent to the subscriber number are possible
(depending on subscription and network operators provision).

AOC -D (Advice of Charge during the call)

At call setup to the public network, ASB150 02 requests for continuous elapsed charging during the call and at the end of the call. This means that the already consumed charging information is always received during the call.
Users of STANDARD and EXECUTIVE telephones may read this charging information on their displays during the call.

AOC -E (Advice of Charge at the end of the call)

At call setup to the public network ASB 150 02 requests for the charging information to be provided at the end of the call. This means that after termination of the external call the recorded charging information is sent to the respective call meter of the extension.

AOC - permanently subscribed

Information on the recorded charges is automatically sent during and at the end of the call, without
ASB 150 02 having to request this information from the public network.

USE

The supplementary service AOC offers the possibility to get an overview of the recorded charges in the public network.

For further information see “CALL METERING“, document 141/15534-ASB 150 02 02 Uen.

OPERATION

System telephones

See “CALL METERING“,
document 141 / 15534-ASB 150 02 Uen.

ISDN terminals

see User’s Guide

CAPACITY

See “CALL METERING“,
document 141 / 15534-ASB 150 02 Uen.

LIMITATION

See “CALL METERING“,
document 141 / 15534-ASB 150 02 Uen.

If an external call information logging system is connected to the ASB 150 02 and you receive only currency units from the public net, only the output format CIL2/CIL3 Hotel (command 6403) may be used. Only these formats contains additional fields for output of costs.

For further information see format
description 9 / 15519-ASB 150 02 Uen

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
		268/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved	Kontr/Checked	Datum/Date	Rev / Tillhör/Referens-File/Reference
		99-07-15	G

PROGRAMMING

1914
Subscribed charging method

This command refers to the respective selected trunk board and individual link (BTU-D=1 link , BTU-B_=8(4) links, MFU=4 links) and states which type of call metering has been subscribed by the public network.

Valid data:
- AOC not subscribed
- AOC - D subscribed
- AOC - E subscribed
- AOC permanently subscribed

AOC not subscribed

In the public network the call meter information for the link is deactivated. In this setting, ASB 150 02 does not request any call meters from the public network.

AOC - D subscribed

At call setup to the public network, ASB 150 02 requests for charging information during the call and at the end of the call.

AOC - E subscribed

At call setup to the public network, ASB 150 02 requests for the charging information at the end of the call.

AOC permanently subscribed

The public network automatically sends call meter information to ASB 150 02 during the call and at the end of the call. At call setup to the public network, ASB 150 02 does not request call meter information and accepts any information received from the public network.

Depending on the public network, the call meter information is sent in the form of metering pulses (charging units) or costs (currency units).

If charging units are received, ASB150 can convert them into currency units and shows the costs on the display. If currency units are received from the public network these are transformed by the system into the internal format. (command 6710)

6710
Currency identifier

This command states the currency identifier to be shown on the display or printer (e.g. ATS, DM or SEK)

6711
Decimals in cost

States the number of decimals to be shown on the display or printer.

6712
Currency identifier last

States whether the currency identifier shall be shown in front of or after the costs (e.g. 100.00 ATS or ATS 100.00).

If the public network sends charging units, the following command has to be defined.

8424
Pulse cost metering

States the price per metering pulse for conversion into costs.

All further commands see "CALL METERING", document 141 / 15534-ASB 150 02 Uen.

EQUIPMENT

BTU-D with ISDN prom set or BTU-B_ or MFU.

SUPPLEMENTARY SERVICE CALLING LINE IDENTIFICATION PRESENTATION (CLIP)

DEFINITION

The supplementary service CLIP provides the called party with the possibility to receive identification of the calling party.

USE

This function makes it possible to identify the caller by means of the national significant number (national destination code + public subscriber number). The A-number will be provided to the STANDARD, EXECUTIVE, OPERATOR telephone and to the ISDN terminal on the S-Interface.

OPERATION

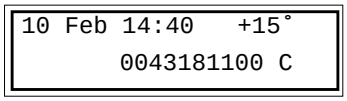
Incoming external call

If the A-party's number is provided by the public network, it will be shown on the display of STANDARD, EXECUTIVE and OPERATOR telephone.
The presentation of the calling A-party number on the ISDN terminal depends on the used terminal type (see userguide)

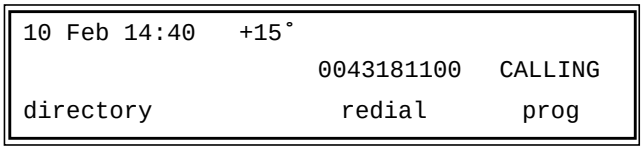
If the A-party's number is not provided by the public net, the display will only show the individual trunk number at an incoming call.

If the A-party's number is provided by the public network, but the B-party has not subscribed to the supplementary service CLIP, only the individual trunk number is presented at incoming calls.

STANDARD

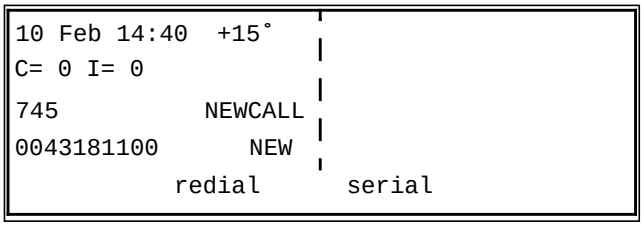


EXECUTIVE



OPERATOR

On the operator telephone also the individual trunk number will be presented.



If the A-party has activated the supplementary service CLIR (Calling Line Identification Restriction, see the following chapter) the A-number is restricted and a special information is presented on the display of the STANDARD, EXECUTIVE and OPERATOR telephone.

How the number suppression will be shown on the ISDN terminal depends on the used terminal type (see user guide).

Outgoing external call

The public network sends the identification of the calling party (national significant number of the caller´s PBX) to the called party.

ASB 150 02 is able to support the public network with additional information about the calling extension. The identification of the calling extension comprises either the national significant number, the public subscriber number or only the directory number of the calling extension, depending on the configuration.

CAPACITY/LIMITATION

At STANDARD and OPERATOR telephones, only 16 digits of the calling number may be presented.

If the received A-number has more than 16 digits than only the last 16 digits will be presented.

PROGRAMMING

1915
Calling Line Presentation on ?

The command is used to define whether or not the calling ASB-party's line directory number is allowed to be sent to the network.

Valid data: Yes/No

No:
Calling ASB-party's dir. number not to network

Yes:
Calling ASB-party's dir. number to network

0169
Directory number in subscribed PSTN series

This command defines whether or not the internal programmed directory number of the extension is in the subscribed PSTN number range. If the directory number is not in the number range, a common number defined by command 1801 is used in case of A- or B-number sending.

EQUIPMENT

BTU-D with ISDN prom set or BTU-B_ or MFU

SUPPLEMENTARY SERVICE CALLING LINE IDENTIFICATION RESTRICTION (CLIR)

DEFINITION

The supplementary service CLIR enables the calling party to prevent presentation of its ISDN number to the called party.

USE

For outgoing external calls this feature is used to conceal one's own identity from the called party.

OPERATION

Outgoing calls

System telephones

There are two alternatives at outgoing calls to restrict the representation of the A-number at the B-party (number secrecy).

Permanent mode:

(command 0149 number secrecy = YES)

The extension is configured to always restrict the presentation of the A-number. At call setup, BTU-D / BTU-B_ / MFU informs the public network to restrict the A-number at the B-party.

Temporary mode:

(command 0149 number secrecy = NO)

A "number secrecy" key can be programmed at system telephones, and the user himself may decide whether or not to restrict the presentation of A- number at the B-party.
This key is at the same time also used for the COLR-function described in a later chapter. For A-number restriction at the B-party, the key "number secrecy"has to be activated before call setup. Restriction is activated until the key is pressed again.

LED-status of the key "number secrecy"

Extinguished = A-number is presented at the B-party.

Steady light = A-number is restricted at the B-party

Note: No matter which mode - temporary or permanent - is activated, it will always have an effect on a subscribed COLR function.
(see chapter' supplementary service COLR')

ISDN terminals

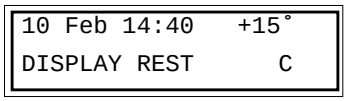
By programming it is defined whether or not ISDN terminals on the S-interface are allowed to use the CLIR/COLR function, how the CLIR function will be activated, depends on the terminal type used (see userguide).

Incoming calls

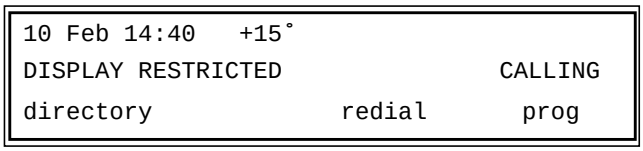
System telephones

If the A-party has activated CLIR, the A-number is restricted and a special information is presented on the display of STANDARD, EXECUTIVE and OPERATOR telephones.

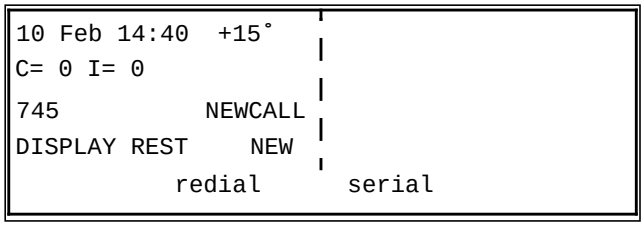
STANDARD



EXECUTIVE



OPERATOR



ISDN terminals

It depends on the terminal type used, how number suppression will be shown on the ISDN terminals (see user guide).

If CLIR is activated by the calling party, the calling party number will not be shown at the display of the called party, however the calling party number is still available in the public network. In case of malicous calls it is possible to register the calling party number by using the supplementary service MCID (Malicous Call Identification) . Once registered, the calling party number of a specific malicous call can easily be requested from the public network provider.

Especially in case of calls to emergency numbers (police, ambulance, fire brigade, ...) it is important that the number restriction of the calling party number can be overridden. In some countries the public network supports this functionality by providing the calling party number to the called party whereby the number information is still marked as not to be used for display purpose due to activated CLIR service.
Depending on the programming (command 1948), it is possible to define whether or not an activated CLIR service will always be overridden and the calling party number presented on the display.

CAPACITY/LIMITATION

If permanent mode is activated

(command 0149 number secrecy = YES), the key “number secrecy“ does not have any function and the lamp lights.

PROGRAMMING

The commands necessary for A-number restriction at the B-party are also used by the supplementary service COLR.

0101
Assign facility category

Extensions which should have the authority to program the key "number secrecy" have to be assigned to that A-COS which permits programming of the key.

3050
Program number secrecy?

States which A-COS may or may not execute the programming of the number secrecy key.

0301
Program Function key

A function key needs to be programmed to activate the temporary mode

0149
Number Secrecy

States whether the A-number may be presented at the B-party for outgoing calls (CLIR) and whether for incoming calls (COLR) the number of the answering B-party may be presented at the A-party.

Valid data: Yes/No

No: The number of the calling and/or answering party is always presented to the opposite party

Yes: The number of the calling and/or answering party is always restricted to the opposite party. A possible programming of the "number secrecy" key becomes invalid and for this programming the lamp lights.

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
		268/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved	Kontr/Checked	Datum/Date	Rev / Tillhör/Referens-File/Reference
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0169
Directory number in subscribed PSTN series

This command defines whether the internal programmed directory number of the extension is in the subscribed PSTN number range. If the directory number is not in the number range, a common number defined by command 1801, is used in case of A- or B-number sending.

1948
CLIR Override

This command is only intended for public networks and provides, especially for calls to emergency numbers (police, ambulance, fire brigade, ...), the calling party number also in case of an activated CLIR service. However a special marker informs that it should not be used for display puposes.

Valid data: Yes/No

No+
The marker in the call set-up message informing that the received calling party number is not to be used for display purposes will be accepted, and a special information will be shown on the display that the caller has activated CLIR service.

Yes
The marker in the call set-up message informing that the received calling party number is not to be used for display purposes will be ignored and the received number will be presented on the display.

EQUIPMENT

BTU-D with ISDN prom set or BTU-B_ or MFU.

SUPPLEMENTARY SERVICE CONNECTED LINE IDENTIFICATION PRESENTATION (COLP)

DEFINITION

The supplementary service COLP provides the calling party with the possibility to receive identification of the connected party.

USE

This feature is used for outgoing calls in order to identify the called party by means of the actual connected directory number. This number may be another number than the dialled one, e.g. if the desired B-party has activated call diversion.

The number of the actual connected party is presented on the display of the STANDARD, EXECUTIVE, OPERATOR telephone and to the ISDN terminal at the S-Interface.

OPERATION

Outgoing external call

For an outgoing ISDN call, the A-party receives , an indication of the actually connected national significant number (= national destination code + national subscriber number) after answering of the called B-party. This received number overwrites the actually dialled one.

It depends on the terminal type used, how the connected number will be presented on the ISDN terminal (see userguide).

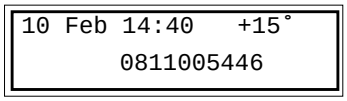
Example:

A-party dials 081100 ext. 5446

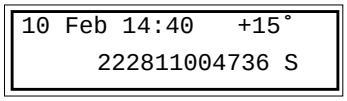
The connected number is ext. 4736

STANDARD

Dialling

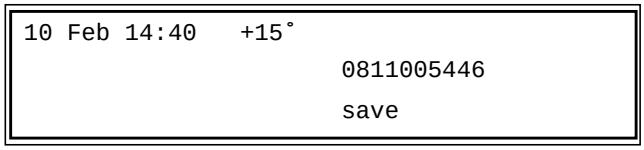


Connected

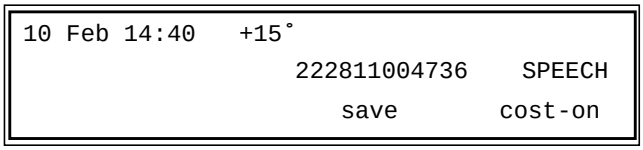


EXECUTIVE

Dialling

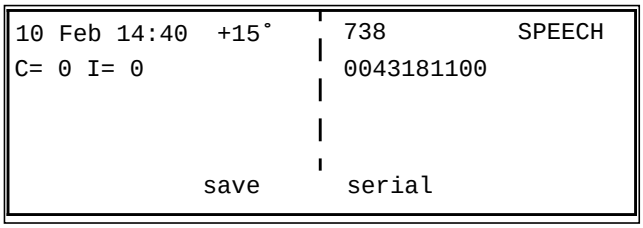


Connected

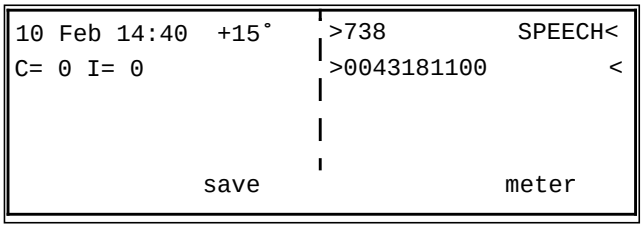


OPERATOR

Dialling



Connected



Connected party's number is suppressed

If the answering B-party has activated the supplementary service COLR (Connected Line Presentation Restriction, see following chapter), the B-number is restricted at the A party and a special information is presented on the display of the STANDARD, EXECUTIVE and OPERATOR telephone.

It depends on the terminal type used, how the number suppression will be shown on the ISDN terminal. (see userguide).

Example

A-party dials 081100 ext. 5446

This subscriber number is diverted, and the new number has the supplementary service COLR activated.

STANDARD

```
10 Feb 14:40   +15°
DISPLAY REST      S
```

EXECUTIVE

```
10 Feb 14:40   +15°
DISPLAY RESTRICTED              SPEECH
                      save      cost-on
```

OPERATOR

```
10 Feb 14:40  +15°   >738          SPEECH<
C= 0 I= 0            >DISPLAY REST       <
                     |
                     |
                     |
             save                   meter
```

Incoming external call

The public network sends the identification of the connected party (national significant number of the connected party´s PBX) to the A-party.

ASB 150 02 supports the public network with additional information about the connected extension. The identification of the connected extension comprises either the national significant number, the public subscriber number or only the directory number of the connected extension, depending on the configuration.

CAPACITY

If the number of the actual connected party has more than 16 digits, only the last 16 digits are presented on the display of a STANDARD and OPERATOR telephone.

LIMITATIONS

The number of the connected B-party is only transmitted upon the first answer. If the call is transferred after the first answer, the new number is not transmitted to the A-party.

For an incoming ISDN call the following numbers are sent to the public network.
In the cases below only the directory number is mentioned. It depends on the configuration, what predigits of the directory number are used .

B-party is an extension or an ISDN terminal

The directory number of the answering extension or the ISDN terminal is sent to the public network.

B-party is an operator

The directory number of the answering operator is sent to the public network.
If the call is queued at the operator, the B-party number will not be sent to the public network.

B-party is a PBX-hunting group

The directory number of the respective answering group member is sent to the public network.

B-party is a voice service

(e.g. programmed absent info)
The B-party number will not be sent to the public network.

B-party is an ACD group

The directory number of the answering agent is sent to the public network.
If the call to the ACD group is queued in the ACD queue, the B-party number will not be sent to the public network.

PROGRAMMING

1918
Connected line presentation on

This command refers to the respective selected trunk board and individual link. (BTU-D =1 link, BTU-B_ = 8 (4) links, MFU = 4 links) The command states whether ASB 150 02 shall send the number of the answering B-party to the public network at incoming ISDN calls, or whether the public network shall assume identification and send the national significant number assigned to the answering B-party's PBX to the A-party. In this case, the directory number of the answering B-party is not contained.

Valid data: Yes / No

Yes:
ASB 150 02 sends the number of the answering B-party to the public network. It depends on the configuration of command 2220 how this number looks like (national siginificant number, subscriber number or only directory number).

No:
ASB 150 02 does not send the number of the answering B-party to the public network.

0169
Directory number in subscribed PSTN series

This command defines whether the internal programmed directory number of the extension is in the subscribed PSTN number range. If the directory number is not in the number range, a common number defined by command 1801, is used in case of A- or B-number sending.

EQUIPMENT

BTU-D with ISDN prom set or BTU-B_ or MFU.

SUPPLEMENTARY SERVICE CONNECTED LINE IDENTIFICATION RESTRICTION (COLR)

DEFINITION

The supplementary service COLR enables the connected party to prevent presentation of its ISDN number.

USE

This feature is used to restrict the presentation of the number of the actual connected B-party at the A-party, when call diversion is activated or the call is picked-up by another extension.

OPERATION

System telephones

There are two alternatives to restrict the presentation of the B-number at the A-party, at incoming calls:

Permanent mode:

(command 0149 number secrecy = YES)
The extension is configured to always restrict the presentation of the B-number at the A-party. With the connected message the BTU-D / BTU-B_ / MFU informs the network that the presentation of B-number has to be restricted at the A party.

Temporary mode:

(command 0149 number secrecy = NO)
A "number secrecy“ key can be programmed at system telephones, and the user himself/herself may decide whether or not to restrict the presenatation of the B-number at the A-party. This key is also used for the CLIR function.

For the B-number restriction at the A-party, the key "number secrecy“ has to be activated before call connection.

LED-status of the key “number secrecy“

Extinguished = B-number is presented at the A-party.

Steady light = B-number is restricted at the A-party

Note: No matter of which mode - temporary or permanent - is activated, it will always have an effect on a subscribed CLIR function (see chapter supplementary service CLIR).

ISDN terminals

It is defined by programming whether or not ISDN terminals on the S-interface are allowed to use the CLIR/CORL function.

It depends on the terminal type used, how the COLR function will be activated (see userguide).

CAPACITY / LIMITATION

If permanent mode is activated

(command 0149 Number secrecy = YES), the key “number secrecy“ has no function and the lamp lights.

PROGRAMMING

System telephones

0101
Assign facility category

Extensions that should be authorized to program the key "number secrecy“ have to be assigned to that A-COS that permits programming of the key.

```
10 Jul 14:40   +15°
FACILITY COS          0101 xxxx       zz
 backward  forward     c/i      return
```

xxxx Enter extension´s directory number

zz Enter the relevant facility category (0 -15)

3050
Program number secrecy?

States which A-COS may or may not execute the programming of the number secrecy key.

```
10 Jul 14:40   +15°
PROG NUMBER SECRECY    3050 xx        z
 backward  forward     c/i      return
```

xx Enter facility category (0 -15)

z Enter the relevant function
Y= Programming allowed
N= Programming not allowed

0301
Program Function key

A function key needs to be programmed to activate the temporary mode

```
10 Jul 14:40   +15°
FUNCTION OF KEY       0301 xxxx yy    zz
 backward  forward     c/i      return
```

xxxx Enter extension’s directory number (1 - 4 digits)

yy Enter the relevant key (00-48)

zz Enter function code =40

0149
Number Secrecy

States whether the A-number may be presented at the B-party for outgoing calls (CLIR) and whether the number of the answering B-party may be presented at the A-party for incoming calls (COLR) .

```
10 Jul 14:40   +15°
NUMBER SECRECY ?       0149   xxxx      z
 backward  forward     c/i      return
```

xxxx Enter extension’s directory number (1-4 digits)

z Enter the relevant function

Yes: The presentation of the number of the calling and the presentation of the number of the answering party is always restricted to the opposite party.

This value automatically disables the function of a programmed "number secrecy“ key. The lamp of the key will always show steady light.

No: The number of the calling and / or answering party is always presented at the opposite party.

ISDN terminals

1957
Number secrecy allowed?

This command states whether the terminal user(s) are allowed to restrict the presentation of the own calling / connected party number in the network.

Valid data: Yes/No

No	Restriction not allowed
Yes	Restriction allowed

Default data: No

EQUIPMENT

BTU-D with ISDN prom set or BTU-B_ or MFU.

SUPPLEMENTARY SERVICE MALICOUS CALL IDENTIFICATION (MCID)

DEFINITION

The supplementary service MCID enables a user to request that the source of an incoming call is identified and registered by the network.

USE

This feature is used to investigate the origin of malicious calls.

OPERATION

System telephones

The B-party has two alternatives to activate the MCID function in the public network:

During the call:

By pressing the programmed "MCID-key", the BTU-D / BTU-B_ / MFU sends a special message to the public network, which initiates the MCID function in the public network. The public network answers the MCID inquiry by sending different messages, which are interpreted by ASB 150 02 as "MCID accepted" if A-number tracing has been successful or as "MCID rejected".
If the B-party has not subscribed to the supplementary service and/or the public network failed to record the source of the incoming call, this is interpreted as "MCID rejected".

The confirmation MCID accepted/rejected will be presented to the telephones with call process tones (acceptance tone and number unobtainable tone).

On the display of the STANDARD, EXECUTIVE or OPERATOR telephone this confirmation is also presented for 3 seconds, and after that the display again presents the corresponding traffic case.

STANDARD

```
     MCID ACCEPTED
DISPLAY REST      S
```

```
     MCID REJECTED
DISPLAY REST      S
```

EXECUTIVE

```
10 Feb 14:40   +15˚        MCID ACCEPTED
DISPLAY RESTRICTED               SPEECH
                                 cost-on
```

```
10 Feb 14:40   +15˚        MCID REJECTED
DISPLAY RESTRICTED               SPEECH
                                 cost-on
```

OPERATOR

```
10 Feb 14:40  +15˚
C= 0 I= 0
 745        NEWCALL
 MCID REJECT   NEW
             redial   serial
```

```
10 Feb 14:40  +15˚
C= 0 I= 0
 745        NEWCALL
 MCID ACCEPT   NEW
             redial   serial
```

If the B-party does not have a programmed MCID function key, he may also use a procedure to initiate the function.

Initiate inquiry:

Press INQUIRY or LINE 2

Dial *39#

The public network answers to the inquiry by MCID accepted or MCID rejected. The system translates these two messages into call progress tones. (acceptance tone and number unobtainable tone).

The inquiry call is then automatically disconnected. In order to get back to the original call, the respective line key has to be pressed again.

There is no display support, in conjunction with the manual procedure.

At the end of a call

If the caller (A-party) disconnects before the "MCID-key" was pressed or the manual procedure was initiated, it is still possible to identify the external caller, before going off-hook.

ISDN terminal

see user guide

CAPACITY / LIMITATION

not applicable

PROGRAMMING

System telephones

0101
Assign facility category

Extensions which should be authorized to activate the MCID-function have to be assigned to the A-COS that permits this function.

```
10 Jul 14:40   +15°
FACILITY COS          0101 xxxx       zz
 backward  forward     c/i      return
```

xxxx Enter extension´s directory number

zz Enter relevant facility category (0-15)

3079
Malicious call id

States which A-COS may execute the MCID function.

```
10 Jul 14:40   +15°
MALICIOUS CALL ID      3079 xx        z
 backward  forward     c/i      return
```

xx Enter facility category (0-15)

z Enter relevant function
Y = allowed
N = not allowed

3049
Program malicious call id

States which A-COS may program the "MCID“ function key.

```
10 Jul 14:40   +15°
PROG MALICIOUS ID       3049 xx         z
 backward  forward     c/i       return
```

xx Enter facility category (0-15)

z Enter the relevant function
Y = allowed
N = not allowed

0301
Program Function key

A function key needs to be programmed to activate the MCID function

```
10 Jul 14:40   +15°
FUNCTION OF KEY        0301 xxxx yy    zz
 backward  forward     c/i       return
```

xxxx Enter extension´s directory number

yy Enter relevant key (00-48)

zz Enter function code =41

1917
MCID subscribed

This command refers to the respective selected trunk board and individual link (BTU-D = 1 link, BTU-B_ = 8 (4) links, MFU= 4 links) and states whether the supplementary service MCID has been subscribed in the network.

Valid data: Yes/No

No
If a extension activates the MCID function, thenit will be ignored by the BTU-D/BTU-B_/MFU
There is no inquiry to the public network.

Yes
If an extension activates the MCID function, BTU-D/BTU-B_/MFU sends an inquriy to the public network

ISDN terminals

1955
MCID allowed by the TE?

This command states whether MCID (= Malicious Call IDentification) is allowed by the terminal user(s) on the interface.

Valid data: Yes/No

No MCID is not allowed
Yes MCID is allowed

Default data: No

EQUIPMENT

BTU-D with ISDN prom set or BTU-B_ or MFU

SUPPLEMENTARY SERVICE MULTIPLE SUBSCRIBER NUMBER (MSN)

DEFINITION

The supplementary service MSN provides the possibility to assign multiple ISDN numbers for a single interface.

In ASB 150 02 this function is used for the S -Interface in order to reach each ISDN terminal on the bus by dialling its programmed MSN number.

USE

This feature allows a direct addressing of the ISDN terminals or the ISDN interface.

OPERATION

Each S-Interface and each connected ISDN - terminal supporting its own MSN requires a directory number in ASB 150 02

These ISDN directory numbers will correspond to route access numbers (see also chapter S-interface).

Incoming call to the S - interface

MSN is supported by the ISDN terminals on the S - interface

Each ISDN terminal can be reached directly by dialling its assigned MSN.
When the ISDN terminal answers the call, its programmed MSN will be sent back as connected number.

MSN is not supported by the terminals on the S-interface or the use of MSN numbers isn't permitted by programming.

Only a global call can be initiated to the S-interface. Each ISDN terminal compatible to the offered bearer service can answer the call.

If MSNs are not permitted on the S-interface, and route numbers as well as the terminals are programmed with MSNs , the called party number will be discarded in the call setup message and a global call will be initiated.

Outgoing call from the S - interface

MSN is supported by the ISDN terminals on the S-interface

If the MSN iis provided by the terminal, this number will be used in the call setup message as the "calling number".

If an ISDN terminal with a programmed MSN but with no assigned directory number in the system initiates a call, the calling party number will be discarded in the call setup message, and the common directory number of the S-interface will be used instead.

MSN is not supported by the ISDN terminal or the use of MSNs is not permitted by programming.

If an ISDN terminal initiates a call and there is no MSN available, the common directory number of the S-Interface will be sent as the calling number.

If a terminal has a programmed MSN, but the programming does not permit it, the calling party number in the call-setup message will be discarded and the common directory number of the S-interface will be sent instead.

CAPACITY / LIMITATION

As mentioned before the MSN refers to a route access number. A maximum of 250 routes may be configured in the system (including all individual and common numbers).

PROGRAMMING

ASB 150 02:

5401
Create route

This command is normally used to create a trunk route.
In case of the S-Interface, the command is used for defining the common directory numbers of the interfaces as well the MSNs of the connected ISDN terminals.

3201
Route members

This command is used for defining the individual trunk numbers, which are behind the route of the common directory number for the S-interface as well the MSNs of the ISDN terminals.

1956
MSN provided?

This command states whether MSN (= Multiple Subscriber Number) is provided by the terminal user(s) on the interface.

Valid data: Yes/No

No	MSN is not provided
Yes	MSN is provided

Default data: No

NOTE: This feature can only be used, if the ISDN-terminals are programmed also with the MSNs !

ISDN terminal:

For programming the MSN see userguide of the ISDN terminal.

EQUIPMENT

BTU-B_ or MFU

SUPPLEMENTARY SERVICE SUBADDRESSING (SUB)

DEFINITION

The supplementary service subaddressing allows the served user to expand his addressing capacity beyond the one given by the E164 number plan.

A subaddress, if presented by a calling user, is delivered unaffected to the called (served) user. Only the served user defines the significance of the subaddress.

Subaddressing in ASB 150 02 is only applicable for the ISDN terminals on the S-Interface and depends on their individual programming.

USE

The subaddressing is used to activate a certain function on the called ISDN terminal or to transmit a certain information.

OPERATION

See user guide of the ISDN terminal

CAPACITY / LIMITATIONS

See user guide of the ISDN terminal

PROGRAMMING

See user guide of the ISDN terminal

EQUIPMENT

BTU-B_ or MFU

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
SEA/TB/MP T.Preißner	SEA/TB/XE	300/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved	Kontr/Checked	Datum/Date / Rev	Tillhör/Referens-File/Reference
SEA/TB/MP		98-01-27 / B	ASB 150 02
		Database reference	
		300.fm	

KEY SYSTEM FUNCTION

Definition

A key system denotes a system in which all or selected trunks are directly represented on system telephones by means of external line keys.

Use

The function is used when it is desired to employ all or parts of ASB 150 02 as a key system, so that extension users have a complete overview of the trunks belonging to the group.

Grouping of trunks

The system can easily be divided into several mutually independent key-system groups.

Each trunk can be assigned to any key on any system telephone.

Types of ring signals

An incoming call on a represented trunk can be given an optional type of ring signal:

- No ring signal
- Repeated ring signal
- Single ring signal
- Delayed repeated ring signal
- Delayed single ring signal

A typical example of use can be that those trunks that are foremost to be answered by the user are assigned a repeated ring signal whereas other trunks can be assigned a single delayed ring signal as indication that the call has not been answered by another extension. Other trunks can only be monitored and are not assigned any ring signal.

Incoming DID calls

There are 2 possibilities how an incoming DID-call is presented on an external line key.

- No difference if the incoming call is a DID-call or not. (DID calls can also be picked up on the external line key.)
- Blocking the pick up functionality on the external line key in case of a DID call

Operation

ECONOMYplus -, STANDARD - and EXECUTIVE Telephones

Incoming calls

The call is signalled on all telephones on which the trunk is represented.
The line lamp flashes rapidly.
A ring signal is issued if this has been programmed for the key.
A call via a trunk is not shown on the display.

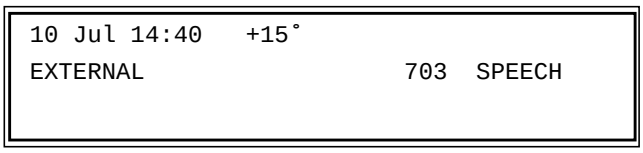
Answer

- Press key for calling trunk.

  Associated lamp flashes to confirm connection.

  If the answering telephone has a display, trunk number will be shown:

EXECUTIVE Telephone



STANDARD Telephone

```
10 Jul 14:40   +15°
EXTERNAL     703  S
```

The group member who first presses the key for the calling trunk will receive the call.

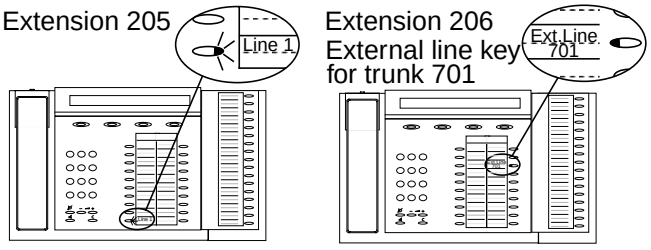
On answer the corresponding keys on the other telephones in the group will glow steadily as indication that the trunk is busy.

Incoming DID calls

There is the possibility to block the pick up functionality on the external line key in case of a DID call.

This effects the situation when you want to pick up an incoming DID-call to a specific destination (extension, PBX-group, fictive number, ACD-group) by pressing an external line key. The LED of the external line key will show steady light instead. If the extension does not answer the call within the defined supervision time (command 1413) it will be automatically transfered to the rerouting position. Then it is possible again to pick up the call from the external line key, which is flashing since the call has been rerouted.

Example:



DID-call via trunk 701 to extension 205

Ext.Line-key shows steady light

Extension 206 is not able to pick up the incoming DID-call to extension 205.

Outgoing calls

- Press free external line key. (Key-lamp is extinguished)
  Caller receives external dial tone directly

Extension user can now dial number of public network subscriber.

A telephone with display shows the dialled number:

EXECUTIVE telephone

```
10 Jul 14:40   +15°
                    123454678
```

STANDARD telephone

```
10 Jul 14:40   +15°
       12345678
```

Individual parking

- Press external line key.
  Associated lamp flashes slowly

The trunk line lamp flashes only on the telephone that parked the call.
The trunk can only be reaccessed from the extension who parked the call.

See also PARKING - INDIVIDUAL, document 402/155 34-ASB 150 02 Uen.

Parking for general access

A special **Hold** key has to be programmed on each telephone which is to undertake this procedure.

- Press **Hold**.
  Associated trunk line lamp flashes slowly

The trunk line lamp flashes slowly on all telephones on which the trunk is represented.

The trunk can be reaccessed by any member of the group.

See also PARKING FOR COMMON ACCESS, document 401/155 34-ASB 150 02 Uen.

Disconnection

A call via a trunk is disconnected like a call via own line.

Normal voice mode:

- Replace handset

Handsfree mode:

- Press **Clear** or **On/Off**

Capacity

The system can be programmed for an optional number of key-system groups.

The number of trunks in each group is limited only by the number of available programmable keys on the system telephones.

- ECONOMYplus DBC211 = 4
- STANDARD DBC212 = 4
- EXECUTIVE DBC213 = 14
- KEY PANEL = 17
- OPERATOR DBC663 = 20

Old telephones:

- ECONOMY DBC601 = 0
- ECONOMY DBC751 = 0
- STANDARD DBC631 = 10
- STANDARD DBC755 = 10
- EXECUTIVE DBC662 = 30
- EXECUTIVE DBC753 = 30
- OPERATOR DBC754 = 20

Limitations

A programmed external line key always shows the status of the trunk even if, for example, during night service the line has a programmed answering position.

Consequently, calls on the line can always be answered by depression of the key.

Even if the trunk is represented on a key it can always be called by means of its individual directory number, provided this is known.

Programming

It is a prerequisite for the creation of a key-system is that all trunks included in the group are to be assigned their own programmable keys.

All extensions in the group possessing system telephones are then assigned the same external line keys with the aid of the copying command.

For the copying function, see document FACILITY DESCRIPTION (155 34-ASB 150 02 Uen).

0301
To program key function

```
10 Jul 14:40   +15°
FUNCTION OF KEY       0301 xxxx yy    zz
 backward  forward     c/i      return
```

xxxx	Enter extension's directory number
yy	Enter relevant key (00 - 48)
zz	Enter function = 12. Step to command 0302

0302
To program trunk line number

The defined keys shall now be programmed for the selected trunks.

```
10 Jul 14:40   +15°
ASSOCIATED NUMBER     0302 xxxx yy  zzzz
 backward  forward     c/i      return
```

zzzz	Enter trunk's directory number Step to command 0303

0303
To program type of ringing

```
10 Jul 14:40   +15°
RINGING ALTERNATIVE   0303 xxxx yy     z
 backward  forward     c/i      return
```

z Enter relevant type of ringing

Individual programming

The keys can also be programmed via individual programming.

See document FACILITY DESCRIPTION (155 34-ASB 150 02 Uen).

0301
To program a Hold-key

```
10 Jul 14:40   +15°
FUNCTION OF KEY       0301 xxxx yy    zz
 backward  forward     c/i      return
```

xxxx Enter extension's directory number

yy Enter relevant key (00 - 48)

zz Enter function = 35

Following command is only accessable via RASC:

1031
Answer by external line key allowed ?

The command is used to state whether the answer of DID-calls by means of the external line key is allowed.

Equipment

All members of a key-system must possess ECONOMYplus -, STANDARD - or EXECUTIVE Telephones.

Also the OPERATOR console can be a member of a group.

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
SEA/TB/MP T.Preißner	SEA/TB/X	320/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved	Kontr/Checked	Datum/Date / Rev	Tillhör/Referens-File/Reference
SEA/TB/MP		98-01-27 / A	ASB 150 02
		Database reference	
		320.fm	

LAST EXTERNAL NUMBER REDIAL

Definition

ASB 150 02 automatically stores the external number dialled last (including ROUTE ACCESS CODE). The user may repeatedly send the directory number.

(Similar facility: SAVED EXTERNAL NUMBER REDIAL.)

Use

External directory numbers may easily be repeated, especially if the called extension is busy or does not answer.

Operation

Storing of external numbers

Each dialled external number will automatically be stored, irrespective of how it was dialled - manually, using ABBREVIATED NUMBERS or with a NAME-SELECTION KEY.

The new directory number replaces the previous one.

If you want to delete the stored number, you only have to select the route access code. In this case the last number redial contains only the route access code - the number dialled previously is erased.

Redialling of the last external number

- Press three times the key * (* * *) to redial the external number.

The access code for LAST NUMBER REDIAL may also be stored in a NAME-SELECTION KEY.

Capacity

The last number redial stores the TRUNK ACCESS CODE or the ROUTE ACCESS CODE together with the dialled external number.

ASB 150 02 stores up to 24 digits. In case that more than 24 digits have been dialled, the last number redial contains the first 24 digits.

Limitations

Initialization of the system clears the last number redial.

Some public exchanges (or private exchanges within a private network) send intermediate tones stating that dialling can be continued. In this case the following has to be done when dialling an external number:
To make sure that the system waits for the proceed-to-send signal at last number redial, this tone has to be marked at dialling by pressing the "mute" key (DBC 75x) the "info"key (DBC 6xx) or "2nd +2" (DBC2xx).

Programming

None.

Equipment

No additional hardware necessary.

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
SEA/TB/MP W. Koller	SEA/TB/XE	321/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved: SEA/TB/MP	Kontr/Checked	Datum/Date: 98-01-31	Rev: B
		Tillhör/Referens-File/Reference: ASB 150 02	
		Database reference: 321.fm	

LEAST COST ROUTING

Contents page

DEFINITION 2
USE. 3
OPERATION 4
CAPACITY 16
LIMITATIONS 17
PROGRAMMING 17
EQUIPMENT. 20

DEFINITION

Least Cost Routing selects the most economic carrier for an entered destination number.

Least Cost Routing calculates the predicted cost for each carrier offering access to the requested destination. The number analysis and the carrier database containing price information are the input data for calculating the predicted cost. Least Cost Routing selects the cheapest carrier that is available.

The selection of a carrier depends on the current traffic situation, the authority of the calling party and the involved trunk, and on the carri

er database. Inputs for the selection of a carrier are for example:

- Calling party (extension or trunk, authority to use Least Cost Routing, tenant group, authority to use a carrier)
- Requested destination (entered destination number)
- Available carriers (offer access to the requested destination, free trunks to connect to the carrier) and their cost information
- Predicted call duration

Glossary

This glossary provides a description of the terms used.

Account Code

The Account Code is a number sent to the carrier for identification of the calling extension or extension group for accounting purposes.

Authority Code

The Authority Code is a number sent to the carrier for identification of the calling company. The carrier uses the Authority Code for checking the authority of the calling party.

Call Cost Profile

The Call Cost Profile relates a Cost Time Scheme and a Cost Level Table to each Destination Number Group supported by a carrier.

Carrier

Public and private network operators provide carriers. Examples for carriers are:

- The public network (PTT)
- A carrier selected through the local public switch.
- A separate route to a carrier network
- A tie line to an interworking exchange

Carrier Access Code

The Carrier Access Code accesses the required carrier via a third party network (e.g. PTT).

Class Of Service (COS)

The COS defines the authorisation of extensions and trunks.

Command

RASC uses commands to enter data. A command is defined by a command number and a command name. This description uses braces „[…]“ for reference to the command number.

Cost Level

See "Relative Cost Level".

Cost Time Scheme

The Cost Time Scheme is a programmable list of 24 hours and 3 day types. This list defines the Relative Cost Level for the call according to day time and day type. The Cost Time Scheme points at a certain line in the Cost Level Table.

Destination Number

The destination number is the telephone number of the called party. You might find the destination number in the public telephone directory.

The user enters this number for access to the re-quired destination (entered destination number). Least Cost Routing may modify that number and send it to the trunk (sent destination number).

Destination Number Group

The Destination Number Group contains destination numbers having the same telephone charges.

Duration Cost Level

See "Relative Cost Level".

Internal Access Code

The Internal Access Code is used to seize a trunk. Examples for the Internal Access Code:

- Directory number of a single trunk line or tie line
- Route Access Code (directory number of a route)

Least Cost Routing (LCR)

Least Cost Routing finds the cheapest carrier for the required destination.

Predigits

The Predigits define the direction of the trunk lines (including tie lines). All trunk lines to the same direction need unique Predigits. The Predigits are used for number analysis.

Pulse Cost Level

See "Relative Cost Level".

Relative Cost Level

The Relative Cost Level is defined by the initial cost and the duration-dependent cost. A Cost Level Table includes up to 16 Relative Cost Levels. Separate Cost Level Tables serve for the billing principles „pulse“ and „duration“.

The Call Cost Profile points at a certain Cost Level Table and to a certain Cost Time Scheme.

Route Access Code

The Route Access Code seizes a trunk line within a route when entered by an extension. See „Internal Access Code“.

Tenant

A tenant is an organisation that shares the exchange with other organisations. A tenant uses his own extensions and trunk lines.

[…]

See „command“.

USE

Least Cost Routing always uses the cheapest route available to the desired party. Thus, the customer automatically saves telephone charges without thinking about alternatives.

OPERATION

This chapter informs about the basic principles of Least Cost Routing and gives some examples.

Basic Principles

1. You may program for each trunk line and for each extension whether Least Cost Routing shall be used. Incoming calls from trunk lines or tie lines always use Least Cost Routing when required for the outgoing trunk.

2. Least Cost Routing analyses the number entered by the extension (or received from an incoming trunk line or tie line). The result is a number of carriers being capable of connecting it to the desired destination.

3. Least Cost Routing calculates the predicted cost for possible carriers. The calculation of the predicted cost can be done on the basis of call duration or pulses. Both billing principles take initial cost per call into consideration.

4. Least Cost Routing uses the cheapest carrier for setup of the connection to the desired party. If the lines to the cheapest carrier are busy, alternative selections are made. The number of alternative selections is programmable per extension (choices: no / 1 / all alternative carriers). Incoming trunk lines have no alternative choice; they always have to use the cheapest carrier for outgoing calls.

5. Least Cost Routing modifies the entered number if this is requested by the carrier's requirements.

6. Least Cost Routing supports the Tenant Function.

John M. Uses a BusinessPhone Exchange

John M., one of the many satisfied users, has to make a call to the United States of America. Today is a normal working day. It's 3:30 PM. John decided not to use his red telephone. The red telephone may give him direct access to Bill C., yet his intelligent ASB150 02 system telephone offers cost effective connections.

John M. and the configuration of his exchange are used for some examples. John's ASB150 02 has access to two carriers and one tie line. The chapter „Information on Carriers" provides more information on the configuration of John's ASB 150 02 exchange.

Information on Carriers

The table below shows the Cost Level Scheme Name and the leading digits of the destination number.

Carrier 1: PTT

The PTT charges with respect to the distance of the call.

Cost Level Scheme	*Destination Number*
PTT A (local calls)	1...-9...
PTT B (national calls)	0...
PTT C (long distance)	00...

Carrier 2: Ferrari

The carrier „Ferrari" does not cover all public destination numbers. The PTT network is used to access the carrier „Ferrari".

Cost Level Scheme	*Destination Number*
Ferrari A	01...
Ferrari B	02...
Ferrari C	001...

Carrier 3: Tie Line „Vie"

A tie line to Ericsson Schrack Vienna is available.

Cost Level Scheme	*Destination Number*
Tie Line Vie	0222 81100...

John M. Enters a Public Telephone Number

John lifts the handset and presses the name selection key. In this key, an Internal Access Code and a public telephone number are stored.

ASB 150 02 immediately responses with the dial tone [2034] after receiving the Internal Access Code, although ASB 150 02 does not send the number immediately. Not even a trunk line is seized for John. What does ASB 150 02 do with the entered number?

Authority Analysis

This analysis checks the authority of the extension and the trunk.

Input of the analysis

- The entered Internal Access Code.
- The directory number of the extension.

Database for the analyses

- Does the trunk related to the Internal Access Code require Least Cost Routing? [1028]
- Does the extension have the authority to override Least Cost Routing? [0152]

Output of the analysis

- The authority analysis decides whether Least Cost Routing has to be performed.

Example

John M. has no authority to override Least Cost Routing. The trunk(s) defined by the Internal Access Code require(s) Least Cost Routing. Therefore, Least Cost Routing performs the number analysis. (Otherwise the number would be dialled as stored in the name selection key.)

Number Analysis

The number analysis uses the entered destination number to find the related Destination Number Group. (See also chapter „Direct Access to Carrier“ (on page 16) for information on number modifications before the number analysis.)

Input for the analysis

- The entered destination number.
- The Predigits related to the entered Internal Access Code.

Database for the analyses

- Destination Number Cross Reference Table [2250]
- Public Destination Number Table [2240]

Output of the analysis

- A Destination Number Group that represents the entered number.

Further use of the output

- The Destination Number Group is used for carrier and cost analyses.

The number analysis uses the following search order

1. The first column of the Destination Number Cross Reference Table is checked first. The analysis stops if a match was found in this table.

2. The search continues with the Public Destination Number Table if no match was found in the first column of the Destination Number Cross Refer-ence Table.

Destination Number Cross Reference Table

The number analysis searches for a matching destination number in the first column and uses the related Destination Number Group for the carrier analysis.

If in ASB 150 02 there are directly connected lines to more than one network, Least Cost Routing needs the Destination Number Cross Reference Table.

Purpose of the Destination Number Cross Reference Table

- The table defines Destination Number Groups that can be called via different directions (networks). It is possible to define destination numbers for up to four directions.
- The table shows what has to be dialled by Least Cost Routing in order to reach the same destination via different directions.

- The number analysis checks the first column for a matching destination number and uses the related Destination Number Group for carrier selection.

Attention!

The Public Destination Number Table and the first column of the Destination Number Cross Reference Table have to use the same Predigits, e.g. the Predigits for PTT.

Example of the Destination Number Cross Reference Table:

Destination Number Cross Reference Table

Predigits : 0	Predigits : 9999	Predigits : ----	Predigits : ----	
Destination Number :	Destination Number :	Destination Number :	Destination Number :	Dest. Number Group
0222811000	0			249
0222811001	1			249
0222811002	2			249
0222811003	3			249
0222811004	4			249
0222811005	5			249
0222811006	6			249
0222811007	7			249
0222811008	8			249
0222811009	9			249

This Destination Number Cross Reference Table tells us:

- The Predigits „0“ is assigned to the trunk lines that access the carrier „PTT“. Therefore, we have to use the same Predigits for the Public Destination Number Table. (Our example uses PTT’s destination numbers for reference purposes. The carrier „Ferrari“ uses the same Predigits, because it is accessed via „PTT“)
- The carrier „tie line Vie“ uses the Predigits „9999“. [1015 Predigits for number analysis]
- The destination number „022281100…“ is related to the Destination Number Group „249“.
- The same destination may be reached by entering „022281100…“ or by seizing the tie line „Vie“.
- Bill’s telephone number (United States „001…“) does not match with the destination numbers in the first column. The number analysis has to check the Public Destination Number Table for „001…“.

Example for a Public Destination Number Table

Predigits: 0		
Destination Number	*Destination Number Group*	*Covered by*
1-9	0	PTT A
0	10	PTT B
01	11	PTT B, Ferrari A
02	12	PTT B, Ferrari B
00	100	PTT C
001	111	PTTC, Ferrari C

Public Destination Number Table

This table relates public telephone numbers (= public destination numbers) to Destination Number Groups. A Destination Number Group contains public destination numbers having the same Cost Level Scheme, e.g. local calls.

Least Cost Routing checks the entered number against the Public Destination Number Table [2240] if no match has been found in the Destination Number Cross Reference Table. It is not necessary to specify in the Public Destination Number Table any Destination Number Groups that are already specified in the Destination Number Cross Reference Table.

The number analysis searches for a matching destination number. The result is a Destination Number Group that represents the entered destination number. The result is the input for the carrier analysis and the cost analysis.

The Destination Number Group 249 is already specified in the Destination Number Cross Reference Table (destination number = 022281100…). The Destination Number Group 249 is covered by the carriers „PTT B“, „Ferrari B“ and „Tie Line Vie“.

John M. calls the United States (the leading digits of the destination number are „001“). Thus, the Destination Number Group is „111“.

Carrier Analysis

Least Cost Routing checks the Carrier Definition Menu for carriers supporting the Destination Number Groups. The carrier analysis finds all carriers that offer a connection to the Destination Number Group.

Input for the analysis

- The Destination Number Group found in the Destination Number Cross Reference Table or in the Public Destination Number Table constitutes the input for the carrier analysis.
- What type of Internal Access Code (Route Access Code or the directory number of a single trunk or tie line) has been entered by John M.?

Database for the analysis

- Tenant group [0151] of the extension that has entered the number.
- Which carriers are open for a specific tenant? [8420]
- General Call Cost Profile [8440]. The Call Cost Profile lists all Destination Number Groups that can be accessed by the carrier.
- Tenant-Specific Call Cost Profile [8428] if a tenant has special agreements with a carrier.

Output of the analysis

- The output of the analysis is a number of carriers (possible carriers) that offer connection to the

Destination Number Group. All possible carriers are proposed when John has dialled a Route Access Code. When the user has entered a directory number of a single trunk, Least Cost Routing proposes just those carriers that can be reached via the particular trunk.

Further use of the output

- The cost analysis calculates the predicted cost for possible carriers.

Example

The Destination Number Group for the United States is „111“. The carriers „PTT“ and „Ferrari“ support this Destination Number Group.

Cost Analysis

Least Cost Routing starts with the calculation of the predicted cost after a possible carrier has been determined.

Inputs, Databases and Outputs

This chapter shows the information required for the Cost Analysis and provides a short description of the output and its further use.

Input for the analysis

- Destination Number Group (output of the number analysis)
- Possible carriers (output of the carrier analysis)
- Date
- Time of the day

General database for the analysis

- Predicted call duration [2035]
- Daytype table [Maintenance /system /day types] (3 types: dt1 = WORKDAY, dt2 = PARTIAL WORKDAY, dt3 = HOLIDAY)
- Exception Days Table [Maintenance /system /exception days]

Carrier-specific database for the analysis

- General Call Cost Profile [8440]
- Cost Time Scheme (list price) [8445].
- Cost Time Scheme (special price) [8450]. This table is useful if tenants have special agreements with the network provider.
- The billing principle [8403] used for the calculation of the predicted cost. You may choose between „Pulses“ and „Duration“.
- Pulse Cost Level Table (list price) [8455] if the billing principle is „Pulse“.
- Pulse Cost Level Table (special price) [8460] if the billing principle is „Pulse“ and tenants have special agreements with the network provider.
- Duration Cost Level Table (list price) [8465] if the billing principle is „Duration“.
- Duration Cost Level Table (special price) [8470] if the billing principle is „Duration“ and tenants have special agreements with the network provider.

Carrier and tenant-specific database for the analysis

- Tenant-Specific Call Cost Profile [8428] if tenants have special agreements with a carrier.
- Cost per metering pulse [8423] if the billing principle is „Pulse“.
- Discount factor [8425] if the billing principle is „Duration“.

Output of the analysis

The result of the analysis is a breakdown of costs of the possible carriers.

Further use of the output

- The breakdown of costs is the input for the carrier selection.

The Designers’ Way of Thinking…

A table is the most popular way to arrange numbers. Yes, there is no doubt about it. But tables have some disadvantages. A table is composed of only three dimensions: lines, columns and values. A table is as flat as a piece of paper.

Therefore, we decided to invent the 4-dimension table, a table that has really four dimensions. How did we manage that? We put one table behind the other. Quite simple!

Mankind always wants to make steps ahead. And so do we. As soon as we had climbed the step to the 4-dimension table, we wanted more.

We decided to introduce tables (1) that point at two other tables (2 and 3). The current day type points at one column of table 2 and the current time points at one row of table 2. The number found in table 2 by means of day type and time points at a certain line in table 3. And a flag determines whether table 3a or table 3b shall be used.

All tables (1, 2, 3a, 3b) have a second table – we use these additional tables if a tenant has special agreements with a network provider (special price).

So we ended up in x-dimension tables and – most important – we introduced a new dimension of user-friendly data maintenance. In some cases you have just to edit the pointer(s) to adapt the carrier-specific data to new requirements.

Just keep above mentioned ideas in mind!

In other words

Table 1 is the Call Cost Profile (tenant-specific or general) [8428 or 8440]. Table 2 is the Cost Time Scheme (list price or special price) [8445 or 8450]. Table 3a is the Pulse Cost Level Table (list price or special price) [8455 or 8460]. Table 3b is the Duration Cost Level Table (list price or special price) [8465 or 8470]. The flag is the billing principle [8403].

The Destination Number Group is stated in one row of the Call Cost Profile if the carrier supports that Destination Number Group. The Call Cost Profile [8428 or 8440] points at one of the Cost Time Scheme Tables [8445 or 8450] and at one of the Cost Level Tables (list price or special price, pulse or duration) [8455, 8460, 8465 or 8470]. The current day type points at one column of the Cost Time Scheme Table and the time points at one row of the Cost Time Scheme Table. Day type and time find the Relative Cost Level in the Cost Time Scheme Table. The Relative Cost Level points at a certain row of the Cost Level Table. Each line of the Cost Level Table defines initial cost and duration-dependent or pulse-dependent cost. The flag „billing principle“ [8403] determines whether the Pulse Cost Level Table (list price or special price) [8455 or 8460] or the Duration Cost Level Table (list price or special price) [8465 or 8470] shall be used.

If the carrier charges the tenant his list price, the Destination Number Group will be found in the General Call Cost Profile [8440]. The General Call Cost Profile points at the Cost Time Scheme (list price) [8455] and the Cost Level Table (list price, pulse or duration) [8455 or 8465].

If a tenant has special agreements with a network provider, the Destination Number Group will be found in his own Tenant-Specific Call Cost Profile [8428]. This Tenant-Specific Call Cost Profile points at a Cost Time Scheme Table (special price) [8460] and at a Cost Level Table (special price, pulse or duration) [8460 or 8470].

Got it?

Procedures of the Cost Analysis

Call Cost Profiles

When searching possible carriers, the Call Cost Profile is checked for the required Destination Number Group. The Tenant-Specific Call Cost Profile [8428] is checked first. The search continues with the General Call Cost Profile [8440] if the Destination Number Group has not been found in the Tenant-Specific Call Cost Profile.

General Call Cost Profile

Use the General Call Cost Profile to define cost information that is the same for all tenants (list price).

The General Call Cost Profile relates to each Destination Number Group a Cost Time Scheme (list price) [8445] and a Cost Level Table (list price, pulse or duration) [8455 or 8465].

Tenant-Specific Call Cost Profile

Use the Tenant-Specific Call Cost Profile to define tenant-specific cost information (special price). This may be the case if a tenant has special agreements with the network provider.

The Tenant-Specific Call Cost Profile relates to each Destination Number Group a Cost Time Scheme (special price) [8450] and a Cost Level Table (special price, pulse or duration) [8460 or 8470].

Example

Call Cost Profile

Carrier No.: 1
Name: Ferrari

Dest. Number Group	Cost Time Scheme	Cost Level Table
11	0	0
12	0	1
111	2	2
249	0	1

The table above shows the Call Cost Profile for the carrier „Ferrari“.

Cost Time Scheme Tables

The Cost Time Scheme Table informs about the Relative Cost Level. The Relative Cost Level may depend on the day type (WORKDAY, PARTIAL WORKDAY, HOLIDAY) and on the time of the day.
The Cost Time Scheme Table points at a line (Relative Cost Level 0–15) of the Cost Level Table.
Use the Cost Time Scheme (list price) [8445] for price information related to the General Call Cost Profile and the Cost Time Scheme (special price) [8450] for the definition of tenant-specific Relative Cost Levels.

Example

COST TIME SCHEME LIST PRICE
Carrier No: 1 Name: Ferrari
Scheme No: 2 Name: Long distance (USA)

Hour	Rel.cost level dt1	dt2	dt3	Hour	Rel.cost level dt1	dt2	dt3
0	0	0	0	12	2	1	0
1	0	0	0	13	2	1	0
2	0	0	0	14	2	1	0
3	0	0	0	15	2	1	0
4	0	0	0	16	2	1	0
5	0	0	0	17	2	1	0
6	1	1	0	18	2	1	0
7	1	1	0	19	1	0	0
8	1	1	0	20	1	0	0
9	1	1	0	21	1	0	0
10	2	1	0	22	1	0	0
11	2	1	0	23	0	0	0

The table shows the Cost Time Scheme for Destination Number Group 111 (United States). It may be seen that different Relative Cost Levels apply to day type and time of the day.

Cost Level Tables

The calculation of the costs can be based on „pulses“ or „duration“. The Billing principle [8403] determines whether the Pulse Cost Level Tables or the Duration Cost Level Tables will be used for the calculation.

Each table consists of 16 lines (Relative Cost Level 0–15). The value of the Call Cost Profile points at the table, the value of the Cost Time Scheme Table (dependent on day type and time) points at the line (Relative Cost Level) of the Cost Level Table.

Summary:

- The Cost Time Scheme tells when a certain Relative Cost Level applies.
- The Cost Level Table contains 16 Relative Cost Levels that inform on the initial cost and the duration-dependent cost.

Pulse Cost Level Table

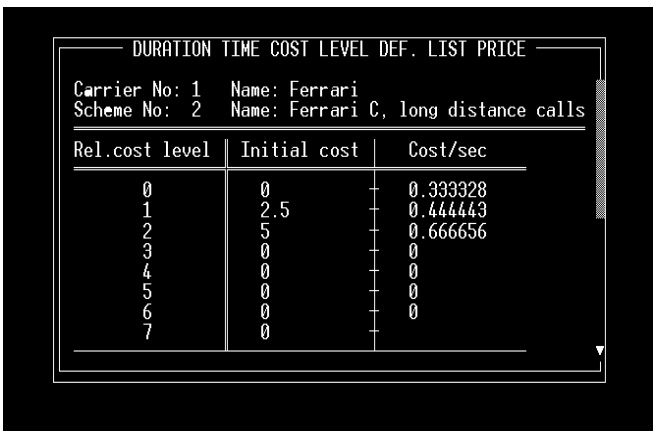
The Pulse Cost Level Table defines initial pulses and pulse frequency.

Duration Cost Level Table

The Duration Cost Level Table defines initial cost and cost per second.

Example for a Duration Cost Level Table

Below, you may see the Duration Cost Level Table No. 2 for the carrier „Ferrari“. This carrier uses the billing principle „duration“ [8403]. In this table, three Relative Cost Levels (0–2) are defined.



Calculation of the Predicted Cost

Least Cost Routing uses a supposed call duration [2035 Predicted call duration] for the calculation of the predicted cost. The cost analysis calculates the cost for each carrier that offers a connection to the requested destination.

Calculation using the billing principle „pulse“

This calculation uses also the cost per metering pulse. The cost per metering pulse [8423] can be defined for every tenant using the carrier.

The following formula calculates the predicted cost.

Cost = (Inital_Pulses + Pulse_Frequency * Predicted_call_duration) * Pulse_Cost_LCR

Calculation using the billing principle „duration“

The calculation can be adapted to tenant-specific requirements. You can define a discount factor [8425] for every tenant using that carrier.

The following formula calculates the predicted cost.

Cost = (Inital_Cost + Cost/second * Predicted_call_duration) * Discount_factor_LCR_%

Carrier Selection

Least Cost Routing selects a carrier according to the breakdown of costs and the availability of trunk lines to the carriers.

Input

- Price breakdown of possible carriers (by means of a cost analysis)
- Which carriers can be reached by use of available (not busy, outgoing) trunk lines

Database

- Internal Access Code [8401] that is used to set up calls to the carrier.
- Are the Routing Choices [0154] limited? (Not allowed to use an alternative choice / Allowed to use one alternative choice / Allowed to use all alternative choices)

Available carrier	*Routing choices*	*Selected carrier*
Cheapest carrier	(uninportant)	Least Cost Routing selects the cheapest carrier.
2nd cheapest carrier	One alternative choice or all alternative choices allowed.	Least Cost Routing selects the 2nd cheapest carrier.
2nd cheapest carrier	No alternative choice allowed.	No carrier selected. The extension (or the calling trunk) receives busy tone.
Other carrier(s) than the cheapest and the 2nd cheapest	All alternative choices allowed.	Least Cost Routing selects the cheapest of the available carriers.
Other carrier(s) than the cheapest and the 2nd cheapest	No alternative choice or one alternative choice allowed.	No carrier selected. The extension (or the calling trunk) receives busy tone.

Output of the Analysis

The output of the carrier selection depends on the availability of a trunk line and on the Routing Choices.

- Trunk line to the cheapest carrier is available: Least Cost Routing selects the cheapest carrier.
- No trunk line is available to set up a call to the cheapest carrier: the next carrier is selected if the Routing Choices [0154] allow one or all alternative selections. The user receives a busy tone if no alternative choices are allowed.
- No trunk is available to select the second cheapest carrier: One of the other carriers (according to the price breakdown) is selected if the Routing Choices allow all alternative selections. Otherwise, a busy tone is sent to the calling extension (or to the calling trunk).

Destination Number Modifications [8410]

The originally entered number needs modification to match with the carrier's requirements. The command 8410 defines the number of leading digits to be deleted from a destination number, and which Carrier Access Code has to be used instead of it.

The result of this modification is the originally entered number with deleted leading digits. This number is used for the arrangement of the number to be sent (called „B-number").

Example

The number does not need any modification if the carrier PTT is selected and the user has entered a PTT telephone number.

Number Arrangement [8415]

The number arrangement adds information to the modified destination number, so that the number matches with the carrier's requirements.

Input

- Destination number Modifications [8410]
- Account Code [8421]
- Authority Code [8422]
- Arranging number to send [8415]

Output

The number received by the carrier may contain the following components:

B-number

This number is the result of the Destination number modifications [8410].

External Access Code

The Carrier Access Code is named External Access Code in this menu.

Authority Code

The carrier uses the Authority Code [8422] to prove that the caller is allowed to access his network. (Some carriers use the Authority Code for accounting purposes as well.)

Account Code

The carrier uses the Account Code to identify the calling extension group (i.e. tenant).

Own extension number

Some carriers use the extension number of the caller to prepare detailed call cost reports.

Change-to-DTMF

This number component changes the dialling method to DTMF.

Wait for proceed-to-send tone

ASB 150 02 waits for a dial tone.

Delay time

ASB 150 02 waits the specified time.

Example

The carrier PTT does not need newly arranged numbers if the user has entered a PTT telephone number.

Sending of the Modified Telephone Number

Input

- Internal Access Code [8401]
- Predigits for carrier access [8402]
- Arranged Destination Number [8415]

Output

ASB 150 02 uses the Internal Access Code [8401] to seize a line and transmits the number as specified in Number Arrangement [8415].

Least Cost Routing uses only lines with the same Predigits, as specified in „Predigits for carrier access“ [8402]. This Predigit may be used for an additional number conversion for carriers that do not use a Carrier Access Code (except the PTT), e.g. tie lines, direct lines to other carriers than the PTT. The information provided by the Destination Number Cross Reference Table is used if the number conversion is necessary.

Least Cost Routing Options

Dial tone after Entering the Internal Access Code

Least Cost Routing needs the desired destination number for analysis. Therefore, it is possible to generate a dial tone [2034] after having received the Internal Access Code. This encourages the user to enter the remaining digits of the destination number.

Calling Least Cost Routing

Extensions may have the authority category Override Least Cost Routing [0152]. Using the function Calling Least Cost Routing it is nevertheless possible to benefit from Least Cost Routing. When selecting the Least Cost Routing Directory Number [5623] prior to the Internal Access Code and the desired directory number, the call is subjected to the function Least Cost Routing.

The default directory number for calling Least Cost Routing is „no number programmed“.

Direct Access to Carriers

The Number Analysis examines whether the dialled directory number starts with a Carrier Access Code. What happens if somebody dials the directory number of a specific carrier? Least Cost Routing examines if the extension has the authority category Direct Carrier Access LCR [0153].

Extension does not have COS Direct Carrier Access LCR

Least Cost Routing uses the table Detecting Carrier Access Codes [8405] to change the dialled Carrier Access Code into a Public Destination Number. Then, a Number Analysis is executed.

Extension has COS Direct Carrier Access LCR

The carrier is seized. Least Cost Routing arranges the number [8415 Arranging number to send] according to the carrier’s requirements.

CAPACITY

Destination Number Groups

The number of Destination Number Groups amounts to 250.

Destination Number Cross Reference Table [2250]

The Destination Number Cross Reference Table has 200 lines. It is possible to analyse up to 16 digits.

Public Destination Number Table [2240]

The Public Destination Number Table has a capacity of 1000 numbers. It is possible to analyse up to 10 digits.

Carriers

Least Cost Routing handles up to 8 different carriers.

Detecting Carrier Access Codes [8405]

You may specify up to 16 Carrier Access Codes and the related public destination numbers.

Destination Number Modifications [8410]

Per carrier, up to 16 Carrier Access Codes together with the necessary modifications can be defined. Each Carrier Access Code can have up to 10 digits.

Tenant Groups

The system offers a multi tenant facility supporting up to 16 tenant groups.

General Call Cost Profile [8440]

Each carrier has its own General Call Cost Profile. 250 Destination Number Groups can be specified in one General Call Cost Profile.

Tenant-Specific Call Cost Profile [8428]

Each carrier has up to 16 Tenant-Specific Call Cost Profiles. 250 Destination Number Groups can be specified in one Tenant-Specific Call Cost Profile.

Cost Time Scheme (list price) [8445]

Up to 32 Cost Time Schemes (list price) are available for each carrier.

Cost Time Scheme (special price) [8450]

Up to 4 Cost Time Schemes (special price) are available for each carrier.

Day types

Three different types of days are available for the calculation of the predicted cost. A number of 24 exception days can be created to define special holidays.

Pulse Cost Level Table (list price) [8455]

Up to 44 Cost Level Tables (list price) are available for each carrier. Each Cost Level Table covers up to 16 Relative Cost Levels. A Relative Cost Level is defined by initial pulses (0–255) and pulse frequency (up to 10 characters including decimal point).

Pulse Cost Level Table (special price) [8460]

Up to 16 Cost Level Tables (special price) are available for each carrier. Each Cost Level Table covers up to 16 Relative Cost Levels. A Relative Cost Level is defined by initial pulses (0–255) and pulse frequency (up to 10 characters including decimal point).

Duration Cost Level Table (list price) [8465]

Up to 44 Cost Level Tables (list price) are available for each carrier. Each Cost Level Table covers up to 16 Relative Cost Levels. A Relative Cost Level is defined by initial cost and cost per second. (Initial cost and cost per second: up to 10 characters including decimal point.)

Duration Cost Level Table (special price) [8470]

Up to 16 Cost Level Tables (special price) are available for each carrier. Each Cost Level Table covers up to 16 Relative Cost Levels. A Relative Cost Level is defined by initial cost and cost per second. (Initial cost and cost per second: up to 10 characters including decimal point.)

Account Code [8421]

The Account Code can have up to 5 digits. An Account Code is available for each tenant having access to a carrier.

Authority Code [8422]

The Authority Code can have up to 16 digits. An Authority Code is available for each tenant having access to a carrier.

LIMITATIONS

None.

PROGRAMMING

You may change the parameters for the following commands if Least Cost Routing has been installed by a technician. Contact your supplier for installation of Least Cost Routing.

Date and Time

6101
Set year month day

```
16 Aug 17:35  +15°
SET YEAR MONTH DAY       6101       >
backward  forward                 return
```

Press *Enter*.

```
16 Aug 17:35  +15°
          950816   6101
                     return
```

Enter the date. Format: YYMMDD

6102
Day of week

```
16 Aug 17:35  +15°
 DAY OF WEEK 1=SUNDAY  6102    4
  backward  forward        return
```

Enter day of week.

1 Sunday
2 Monday
3 Tuesday
4 Wednesday
5 Thursday
6 Friday
7 Saturday

6103
Set hour minute second

```
16 Aug 17:35  +15°
SET HOUR MIN.SEC.       6103    >
backward  forward                return
```

Press *Enter*.

```
16 Aug 17:35  +15°
       173500  6103
                     return
```

Enter time. Format: hhmmss

6104
12h-mode display?

The time may be displayed in 12- or 24-hour mode. (Independent of this programming, entering the time at a telephone is always done in the 24-hour mode, e.g. at wake-up call, reminder, setting of time.)

```
16 Aug 17:35  +15°
 12 H MODE,DISPLAY   6104     NO
  backward  forward         return
```

Enter *YES* for 12h-mode display.

Extension Parameters

0151
Tenant group

This command states the Tenant Group the extension belongs to.

```
16 Aug 17:35  +15°
 TENANT GROUP      C 0151 xxxx     yy
   backward  forward     c/i     return
```

xxxx Enter the directory number of the extension.
yy Enter the Tenant Group.

0152
Override LCR?

This command states whether or not the extension may set up calls without Least Cost Routing independent if the trunk requests Least Cost Routing or not.

```
16 Aug 17:35  +15°
 OVERRIDE LCR ?    C 0152 xxxx     yyy
   backward  forward     c/i     return
```

xxxx Enter the directory number of the extension.
yyy Enter YES to allow the extension to override Least Cost Routing. Otherwise enter NO.

0153
Direct carrier access?

By means of this command you may authorise an extension to choose a carrier directly. The selection of a carrier is done by dialling the Internal Access Code and the Carrier Access Code.

If an extension has the COS for Direct Carrier Access LCR, the low-price route is not selected by Least Cost Routing. However, Least Cost Routing will modify the dialled directory number according to the requirements of the carrier.

```
16 Aug 17:35  +15°
 Direct carrier acc? C 0153 xxxx  yyy
   backward  forward     c/i    return
```

xxxx Enter the directory number of the extension.
yyy Enter YES to allow the extension to select a carrier. Otherwise enter NO.

0154
Alternative routing

This command determines the selection of alternative routes by means of Least Cost Routing.

```
16 Aug 17:35  +15°
 ALT ROUTING      C 0154 xxxx     y
   backward  forward     c/i    return
```

xxxx Enter the directory number of the extension.
y Enter a Value according to the table below.

Value Alternative choices for LCR

0 Not allowed to use an alternative choice
1 Allowed to use the second routing choice
2 Allowed to use all alternative routing choices

System Data

2024
Initiate public Dialtone at LCR

This command is used to state whether the public dialtone has to be sent to the caller, after dialling a directory number of a LCR-controlled trunk.
The parameter programmed by this command is relevant only if command 2034 is set to YES.
See also command "1026 LCR analysis required".

2034
Dial tone at LCR

This command determines whether the extension shall receive a proceed-to-select signal after dialling the

Internal Access Code. This proceed-to-select signal shall make the extension continue dialling because Least Cost Routing needs the dialled digits for the Number Analysis.

```
16 Aug 17:35  +15°
 DIAL TONE AT LCR C    2034      YES
  backward  forward           return
```

Enter *YES* to receive a dial tone after dialling an Internal Access Code.

Directory Numbers

5623
Define LCR number

This command defines the directory number for requesting Least Cost Routing.

It depends on the programming whether an outgoing call has to use Least Cost Routing. By means of the Least Cost Routing directory number you may request Least Cost Routing in any case.

Enter the Least Cost Routing directory number as a prefix to the destination number if you want to use Least Cost Routing. The default directory number for calling Least Cost Routing is „no number programmed“.

```
16 Aug 17:35  +15°
 DEFINE LCR NUMBER  5623    _
  backward  forward          return
```

Enter the directory number for calling Least Cost Routing.

Carrier Definition Menu

8420
Carrier open

This command defines whether the tenant is allowed to use the carrier.

```
16 Aug 17:35  +15°
 CARRIER OPEN    8420   x
  backward  forward          return
```

x Enter the carrier number (0–7).

Press *Enter*.

```
16 Aug 17:35  +15°
 TENANT NUMBER    C 8420   x y
  backward  forward     c/i     return
```

y Enter the tenant number (0–15).

Press *Enter*.

```
16 Aug 17:35  +15°
 CARRIER OPEN    8420   x y  NO
  backward  forward     c/i     return
```

Enter *YES* if the tenant is allowed to use that carrier. Otherwise enter *NO*.

Press *Enter*.

8421
Account code

Enter the Account Code for the tenant (if required). The Account Code can have up to 5 digits.

```
16 Aug 17:35  +15°
 ACCOUNT CODE    8421   x
  backward  forward          return
```

x Enter the carrier number (0–7).

Press *Enter*.

```
16 Aug 17:35  +15°
  TENANT NUMBER     C 8421    x y
    backward  forward       c/i        return
```

y Enter the tenant number (0–15).

Press *Enter*.

```
16 Aug 17:35  +15°
  ACCOUNT CODE     C 8421    x y     _
    backward  forward       c/i       return
```

Enter the Account Code (up to five digits).

Press *Enter*.

8422
Authority code

Enter the Authority Code for the tenant (if required). The Authority Code can have up to 16 digits. The code cannot be displayed out of security reasons. RASC responds with an asterisk (*) for every digit.

```
16 Aug 17:35  +15°
  AUTHORITY CODE ?    8422   x
    backward  forward                 return
```

x Enter the carrier number (0–7).

Press *Enter*.

```
16 Aug 17:35  +15°
  TENANT NUMBER     C 8422    x y
    backward  forward       c/i       return
```

y Enter the tenant number (0–15).

Press *Enter*.

```
16 Aug 17:35  +15°
  AUTHORITY CODE ?    C 8422    x y    >
    backward  forward       c/i        return
```

Press *Enter*.

```
16 Aug 17:35  +15°
                    _8422     x y
                                       return
```

Enter the Authority Code (up to 16 digits).

EQUIPMENT

A CPU-D3 or later version is mandatory for Least Cost Routing.

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
SEA/TB/MP T.Preißner	SEA/TB/XE	322/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved: SEA/TB/MP	Kontr/Checked	Datum/Date: 97-10-31	Rev: B
		Tillhör/Referens-File/Reference: ASB 150 02	
		Database reference: 322.fm	

LOUDSPEAKER PAGING

Definition

Loudspeaker paging denotes a call from a system telephone that is announced via the loudspeakers in all or groups of system telephones with loudspeakers.

Loudspeaker paging can also be combined with the immediate answer possibility.

Use

Loudspeaker paging is used to gain rapid contact with one or more persons.

By means of division into groups it is possible to page within one department only or to page all extensions.

By paging in one department only it is possible to avoid disturbing people who are not involved.

A paged extension (pagee) can answer the call directly by moving to the nearest telephone that has the group key programmed.

Operation

Call

To initiate loudspeaker paging:

- Press key for group of extensions to be paged.
  Lamp of group key glows steadily at the same time as either **Line 1** or **Line 2 *** is seized.
  (* not available on BASIC Telephone)
  When key is pressed all free extensions in group hear short tone burst.
- Now press key once more and announce message.
  Keep key depressed until entire message has been transmitted and then release it.
  For extensions with group key, the lamp now starts to flash rapidly

If call is not disconnected manually via **Clear**-key, automatic disconnection will take place 30 seconds after release of call key.

This monitoring period gives the pagee time to answer the call directly.

Answer

An extension who hears paging can call the pager by means of a normal internal call.

Answer via group key

An extension user who hears paging can, if he/she has access to the button for the paging group, answer the call directly as long as the group key lamp flashes.

- Press group key.
  Speech status with pager will be established.
  When speech connection has been established call will be signalled as normal internal call via **Line 1**, **Line 2 *** or **Inquiry**.
  (* not available on BASIC Telephone)
  Signalling via group key ceases and paging channel is released.

If an extension who receives a call initiates an outgoing call, paging in (via) the monitoring

loud-speaker will be interrupted while the (if any) group key lamp keeps flashing until the call ends.

Capacity

Eight paging groups can be programmed.

The number of extensions per paging group is not limited.

An extension or operator can be a member of any number of paging groups.

Limitations

The following prerequisites apply for initiation of a paging call:

- Calls can only be made from telephones with a key programmed for loudspeaker paging
- **Line 1** or **Line 2 *** shall be free
  (* not available on BASIC Telephone)
- No other paging shall be ongoing in the group

The following prerequisites apply for a paging call to be announced via a telephone:

- The telephone must have a loudspeaker
- The extension must be programmed as a member of the group
- The extension must be completely free

The user cannot adjust the volume for loudspeaker paging by means of the **+** - and **-** - keys.
It is however possible to individually program the level for loudspeaker paging. See ”Programming” below.

Programming

0101
State which extensions are permitted to undertake paging

```
10 Jul 14:40   +15°
FACILITY COS          0101 xxxx       zz
 backward  forward     c/i      return
```

xxxx	Enter extension's directory number
zz	Enter relevant facility category (0 - 15). Initially, all extensions belong to group 0.

3006 - 3013
Facility category list

For programming of the facility category list, see CATEGORISATION, document 149/155 34-ASB 150 02 Uen.
Here it is stated, for each facility category, whether paging is permitted in groups 0 - 7.

Commands can be set to:

- Y = yes

or

- N = no

Initially all commands are set to N = no.

LOUDSPEAKER PAGING GROUP	FACILITY CATEGORY GROUP		
	00	01	02 -- 15
3006 Group 0	Y	Y	Y -- Y
3007 Group 1	Y	Y	Y -- Y
|	|	|	|
3013 Group 7	N	N	N -- N

0301
Define key for paging and answer

To facilitate paging it is necessary to program a key for each group to be paged

```
10 Jul  14:40  +15°
FUNCTION OF KEY       0301 xxxx yy    zz
  backward  forward     c/i      return
```

xxxx Enter extension's directory number

yy Enter relevant key (00 - 48)

zz Enter function = 15

Step to command 0302.

0302
State group for the key

When the function has been defined, the paging group shall be stated

```
10 Jul 14:40   +15°
ASSOCIATED NUMBER     0302 xxxx yy    zz
 backward  forward     c/i      return
```

zz Enter paging group's number (0 - 7)

3102 - 3109
Program name of the group

Denotes the name to be shown on the pager's display when a call is made.

Initially the name is: "VOICEPAG. 0" (1 - 7)

```
10 Jul 14:40   +15°
NAME VOICE PAG.GRP0   3102             >
 backward  forward     c/i      return
```

- Press **Enter**-key
- Enter relevant name max. 12 characters
- Press **Enter**-key.

4801 - 4808
Group members

For each extension one can state which groups the extension is to be a member of.

The table below shows how one can make a certain extension a member of an optional number of groups by altering commands from N = No to Y = Yes.

GROUPS	EXTENSIONS			
	200	**201**	**202**	**nnn**
Gr 0 = 4801	N	N	N	N
Gr 1 = 4802	N	N	N	N
Gr 2 = 4803	N	N	N	N
Gr 3 = 4804	N	N	N	N
Gr 4 = 4805	N	N	N	N
Gr 5 = 4806	N	N	N	N
Gr 6 = 4807	N	N	N	N
Gr 7 = 4808	N	N	N	N

```
10 Jul 14:40   +15°
VOICE PAGING GRP.0    4801 xxxx        z
 backward  forward     c/i      return
```

Enter group member's extension number

z Enter relevant function:
Y = Member of group.
N = Not member of group (default data).
Repeat procedure for all extensions that are to be members of group 0.

Repeat the procedure for groups 1 - 7 via commands 4802 - 4808.

4809
Volume control

The volume for loudspeaker paging can be set for each individual system telephone.

```
10 Jul 14:40   +15°
VOICE PAGING VOLUME   4809 xxxx      zz
 backward  forward     c/i      return
```

xxxx	Enter extension's directory number
z	Enter desired volume 01 - 11

Following commands are only accessable via RASC:

2040-2047
Paging volume

The paging volume per group can be programmed.

2048-2055
Overide individual paging volume

The individually set paging volume can be overridden by the volume set per paging volume.

Equipment

BASIC-, ECONOMYplus -, STANDARD -, EXECUTIVE Telephone or Operator's Console.

MAILBOX SYSTEM

Definition

In ASB 150 02 the mailbox system offers internal and external callers the possibility to leave messages in a user's mailbox. If an external caller does not want to leave a message, he/she can exit the mailbox system by sending DTMF tones to be connected to another extension.

On analogue telephones messages waiting in the mailbox are indicated by a special dial tone when the user lifts the handset and by a flashing lamp if the telephone supports polarity reversal.

Waiting messages can be retrieved internally and externally. External and internal callers are guided through the retrieving procedure by voice prompts. Using an EXECUTIVE or OPERATOR instrument the internal callers can retrieve messages also by using their display and function keys. (The same procedure as mentioned in chapter MESSAGE SYSTEM, document 341/155 34-ASB 150 02 Uen applies.)

Use

Messages can be left for an extension that does not answer. This feature can be used e.g. to replace an answering machine. Messages can be retrieved internally and externally. You can access the mailbox system using DID or Basic Automated Attendant and step through a procedure of voice prompts which have to be answered by DTMF tones in order to listen to the messages.

Operation

Types of mailbox systems

There are two different types of mailbox systems:

- individual mailbox system
- common mailbox system

Individual mailbox system:

In ASB 150 02 one individual mailbox system can be created, containing all the individual mailboxes. The extension mailboxes can only be accessed via the message key, pressing *59# or dialling the individual mailbox system directory number.

A mailbox can be assigned to every extension which can invoke diversion or follow me to the individual mailbox system for caller(s) to leave a voice message.

It is possible to record, change and erase personal greetings, even remotely, to play personal greetings if the extension is busy, does not reply or is diverted, to offer a flexible and user-friendly handling of the mailbox.

Common mailbox system:

The common mailbox system is independent of the individual mailbox system and contains 16 common mailboxes. Compared to the individual mailbox system each common mailbox can be accessed individually by its own directory number.

An extension has the opportunity to initiate a diversion or follow me to a common mailbox. A diverted caller has the possibility to leave a voice message in the common mailbox.
By directly dialling the directory number of the common mailbox the messages sent to the mailbox can be retrieved.

Entering the mailbox system

There are different cases for using the mailbox system:

- As it is described in MESSAGE SYSTEM, document 341/155 34-ASB 150 02 Uen.
- User diverts his/her extension to the individual mailbox system or to the directory number of the desired common mailbox.
- Messages are retrieved from one's own extension.
- Messages are retrieved from another extension - not one's own.
- External retrieval of messages.

Leave a message

Diversion to a mailbox system (common or individual)

Any user may divert his/her extension to a mailbox system.

All types of diversion are possible:

- direct diversion
- diversion on no reply
- diversion on busy
- follow-me

The internal or external caller hears a (personal) greeting announcement and, if programmed, the directory number of the extension which has activated the diversion.
Each tenant group and each common mailbox has its own greeting announcement.

After the greeting a voice prompt can be configured giving the external callers to the individual mailbox system the option to be connected to an exit-position (e.g. operator) or to leave a message.
The caller has to respond to the voice prompt by DTMF tones. If there is no reaction, the caller will automatically be routed to the recording procedure.

For each tenant group a specific exit-position can be programmed.

If no exit-position is defined the incoming external call will be routed to the reroute position of the relevant trunk.

Greetings in the mailbox systems

If the extension is diverted to the mailbox system three types of greetings can be played:

- General greeting (default setting, this is pre-recorded)
- Absence info (played only if activated)
- Personal greeting (has to be recorded by the extension user. A selection is available for busy, no reply and direct diversion=follow me. For deactivation, this recording has to be erased).

The personal greeting can be recorded, played and erased voice guided by using the retrieving procedure when calling the mailbox system.
Executive telephones have also the possibility by using the "Absence info" procedure to record, play and erase the personal greeting by using the menu keys.
In the "Absence info" menu select "greeting" to enter the presonal greeting menu.

Recording a message

After the caller has passed the greeting and the option to exit the mailbox system (only applicable for external caller's to the individual mailbox system) he/she will be informed by a voice announcement how to leave a message in the mailbox system. The maximum message length which can be recorded is selectable with up to 255 seconds.

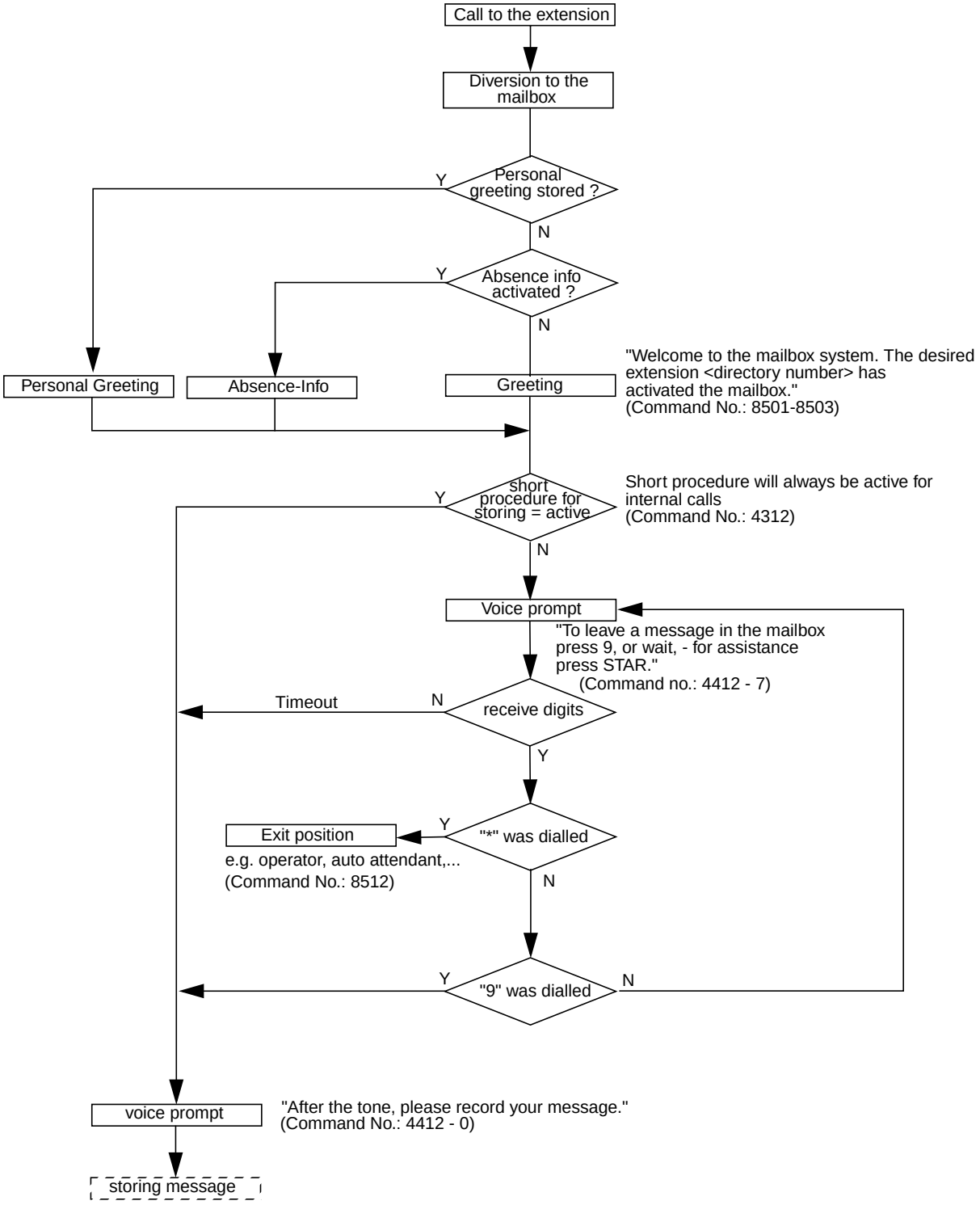
A signal tone informs the caller that the recording time has started and 10 seconds before the recording time ends the caller will be informed by a second signal tone.

The message will be stored including the sender, date and time of the recording.

If the message is not listened to by the receiver within a programmable system timeout, the message is returned to the sender (only for EXECUTIVE and OPERATOR Telephones).

Messages lasting less than 1 second will be deleted!

A user has activated diversion on his/her extension to the INDIVIDUAL mailbox system and the voice prompts are programmed:



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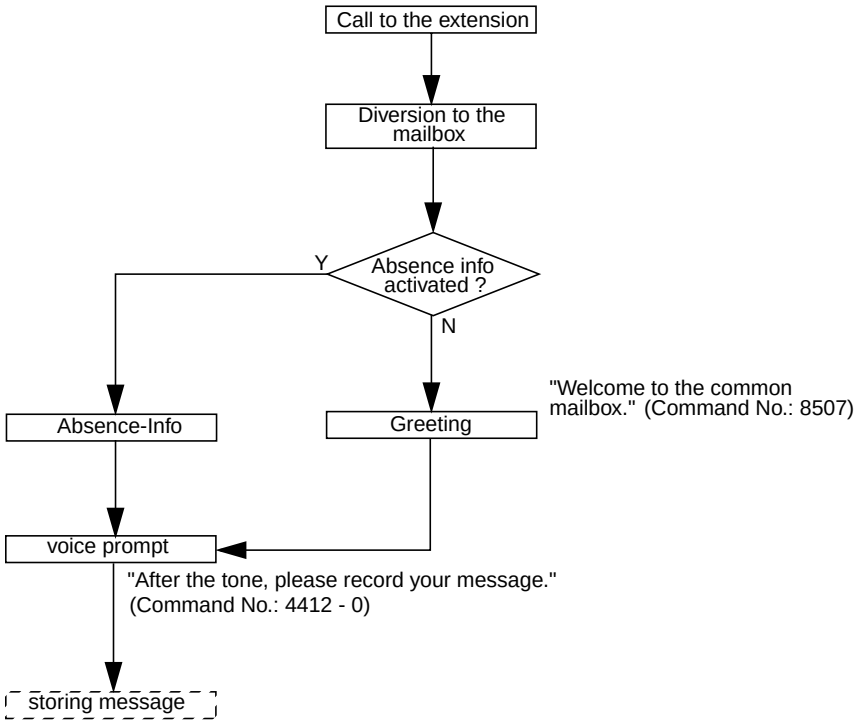
		340/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved	Kontr/Checked	Datum/Date	Rev / Tillhör/Referens-File/Reference
		99-08-17	E

A user has activated diversion on his/her extension to the COMMON mailbox system and the voice prompts are programmed:



Message indication

System telephones

When a message has been left in the individual mailbox, this will be indicated by a flashing "Message-key" lamp.

To indicate messages in a common mailbox, a separate programmable "Common mailbox key" is required.

Analogue Telephones

When a message has been left in the individual mailbox, this is indicated by a special dial tone or by a flashing message waiting key, dependent on the ELU-A and the telephone set used.

Retrieving messages

There are three ways for retrieving messages:

- Press your "Message-key" to retrieve your own messages.
- Press the "Common mailbox key" to retrieve messages from the common mailbox system.
- To retrieve messages from external or from another internal extension than your own:
  Dial the directory number for the individual mailbox system and enter your extension number or dial the directory number for the common mailbox.

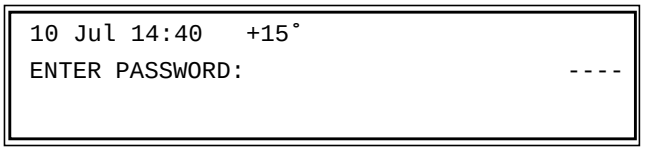
Internal retrieving of messages

EXECUTIVE and OPERATOR Telephone

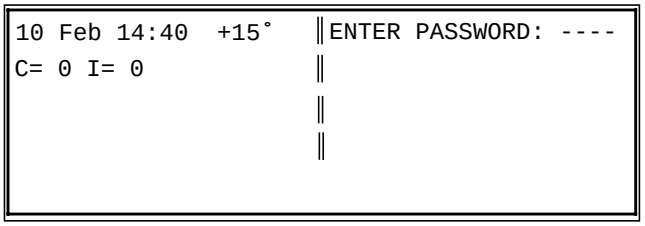
The "Message key" lamp or the programmed "Common mailbox key" flashes when messages are waiting.

It can be programmed, whether a password (= authorization code) is required to retrieve messages. When password control is activated, the display shows the following:

EXECUTIVE Telephone



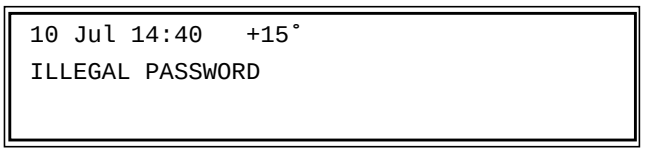
OPERATOR Telephone



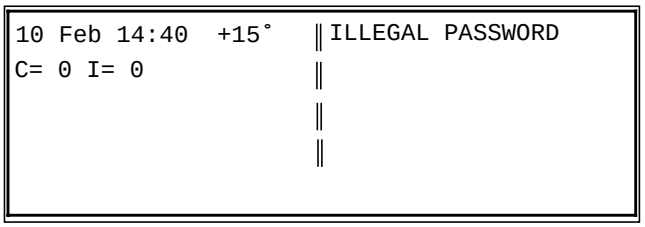
Enter Password.
Confirm with "ENTER" or " 2nd + # ".

If the wrong password is entered, a warning message appears on the display:

EXECUTIVE Telephone



OPERATOR Telephone



After a few seconds the user gets a second chance to enter the password. If the password is still not valid, the warning message will appear again and the user will be disconnected.

(Further procedure see MESSAGE SYSTEM document 341/155 34-ASB 150 02 Uen).

STANDARD Telephone

The message key lamp or the programmed "Common mailbox key" flashes when messages are waiting.
It can be programmed whether a password is required to retrieve messages. If password control is activated, the display shows following:

```
10 Jul 14:40   +15°
ENTER PASSWORD:  ----
```

Enter Password.
Confirm with "ENTER" or "2nd + #".

If the wrong password is entered, a warning message appears on the display:

```
10 Jul 14:40   +15°
ILLEGAL PASSWORD
```

After a few seconds the user gets a second chance to enter the password. Is the password is still not valid, the warning message appears again and the user will be disconnected.

(For further procedure see next page)

BASIC and ECONOMYplus Telephone

The user presses the flashing message key or the programmed "Common mailbox key" and after the greeting phrase (one greeting phrase for each tenant group and each common mailbox, also used for external retrieving of messages), a voice prompt forces the user to enter his/her password (If it is programmed that a password is required). After entering the correct password the user gets access to his/her messages.
(For further procedure see next page)

ANALOGUE Telephone

"Message waiting" is signalled by a special dial tone. For retrieving messages from the individual mailbox system, the user has to dial " * 59 # ". The following retrieval procedure is exactly the same as for the BASIC Telephone.
For retrieving messages from the common mailbox system the user has to dial the directory number of the common mailbox.

Internal retrieving from another telephone set than one's own

To retrieve messages internally from another telephone than one's own, the caller has to dial the directory number of the mailbox system (individual or common) to get access to the mailbox function.

(The further procedure is the same as for the external retrieval of messages).

External retrieving of messages

An external caller can dial-in via DID or via Basic Automated Attendant to the number of a mailbox system (individual or common) to get access to the mailbox function.
The external caller will receive a greeting announcement. Then the caller has to enter his/her extension number to check whether a mailbox is programmed for this extension or whether the extension has access to the Common mailbox system and the correct password. After the identity check the caller has access to his/her "call-me" (only for individual mailboxes) and voice messages.

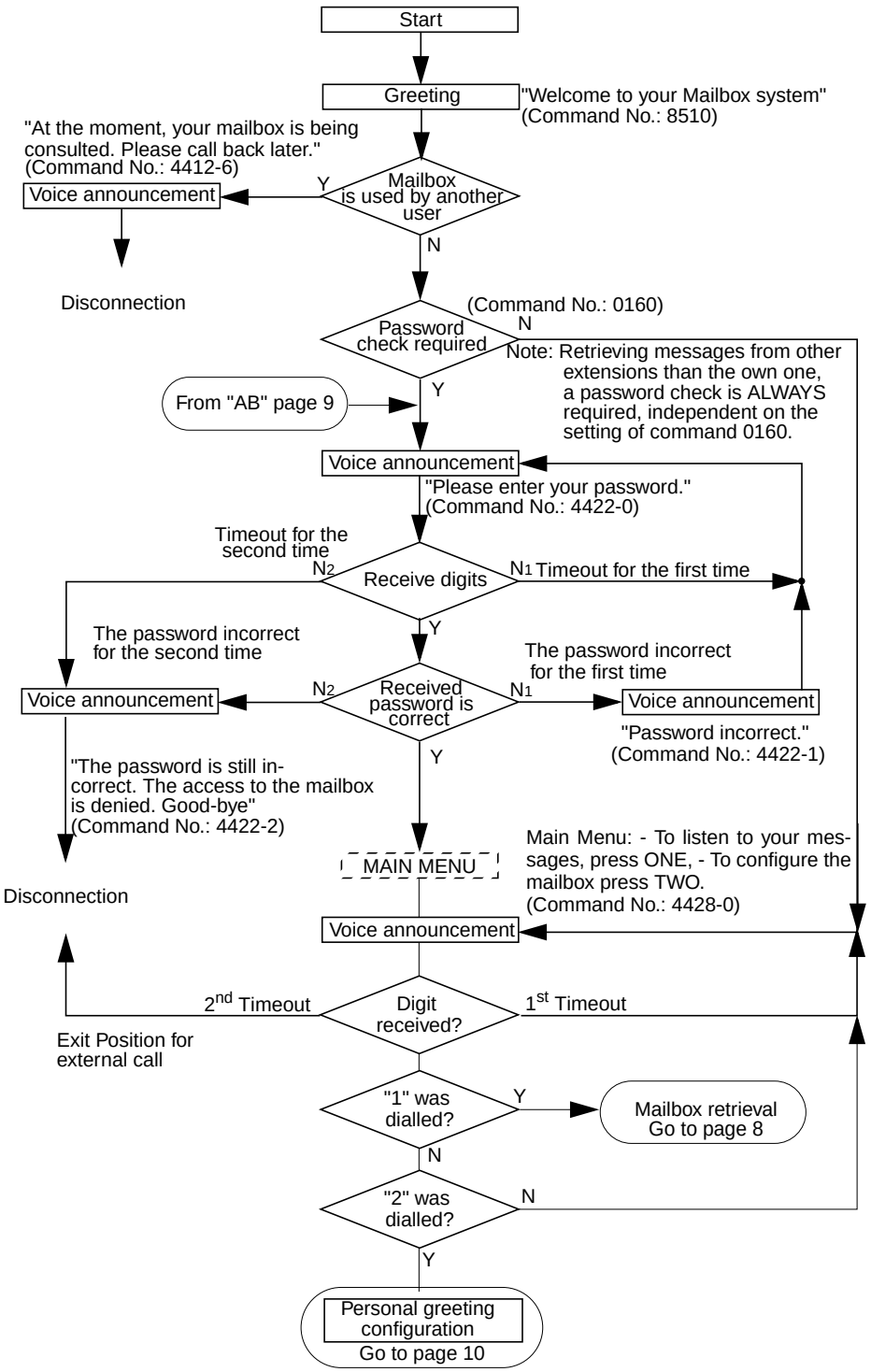
Retrieving messages - priority of messages

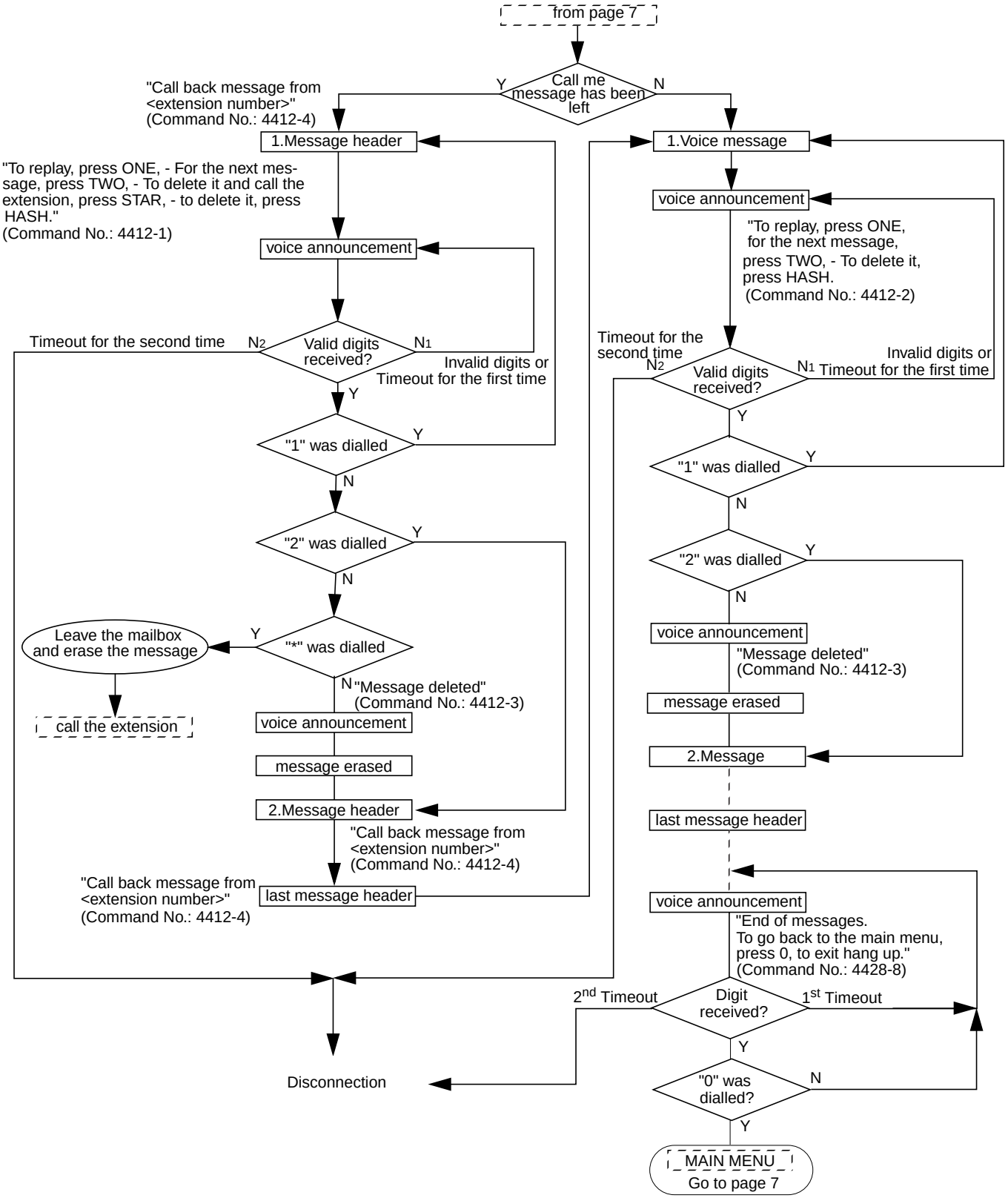
The messages are stored in "call-me messages" and "voice messages". The message list starts with call me messages. (Does not apply to EXECUTIVE and OPERATOR Telephones)
The user gets the information about the sender of the call-me message and can decide, whether he wants to leave the mailbox system in order to call the sender, to erase the message, to play it again or to hear the next one.
By calling the sender of the "Call-me"-message you will leave the mailbox-system.
When all "call-me messages" are answered (sender was called) or erased, the user hears the first received voice message.

Delayed Automatic Answer for the Mailbox-system

see DELAYED AUTOMATIC ANSWER, document 160/155 34-ASB 150 02 Uen.

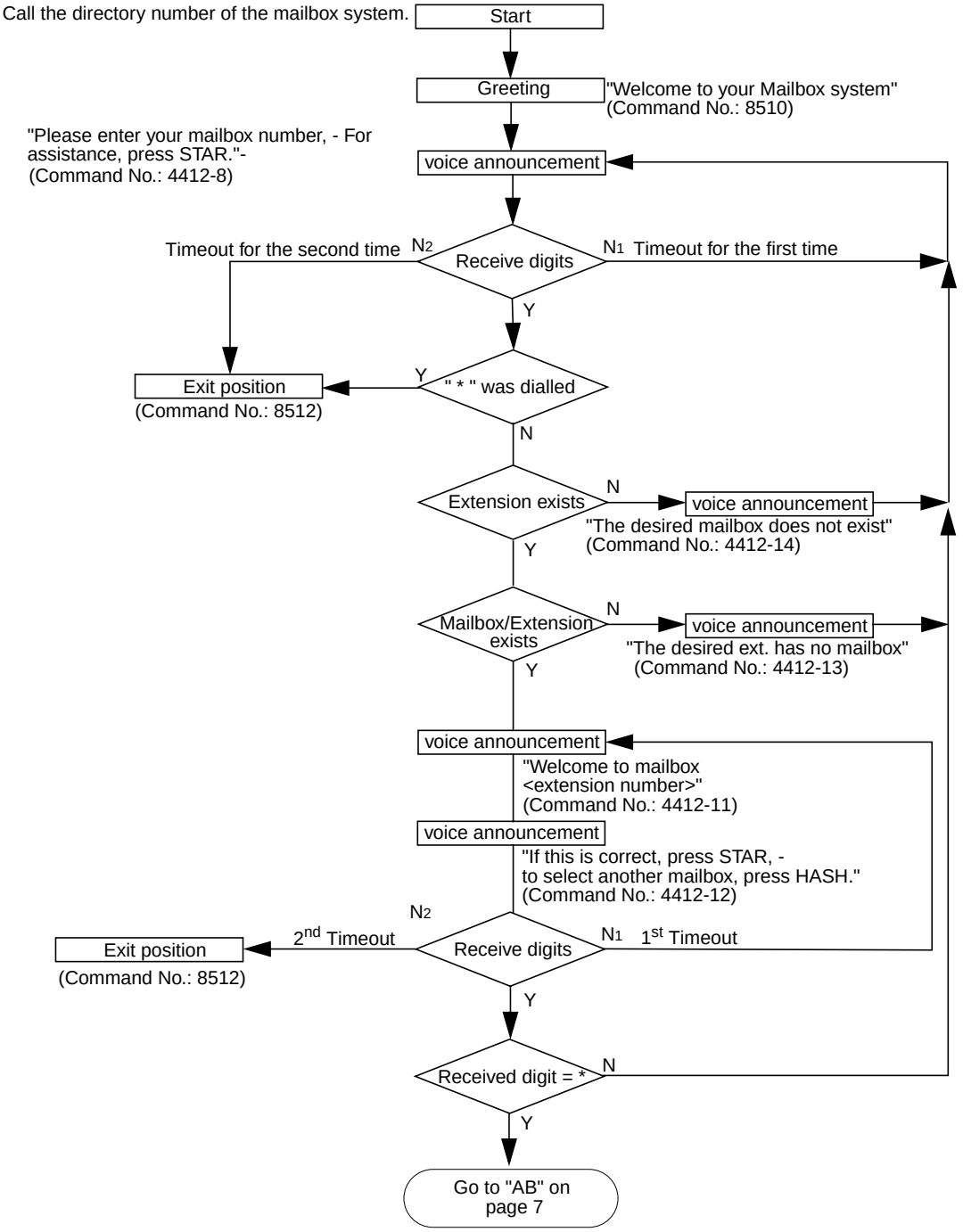
INTERNAL RETRIEVING of messages from the INDIVIDUAL mailbox system:
for users of analogue*- and system telephones (except EXECUTIVE and OPERATOR Telephone)
**** with limitations***



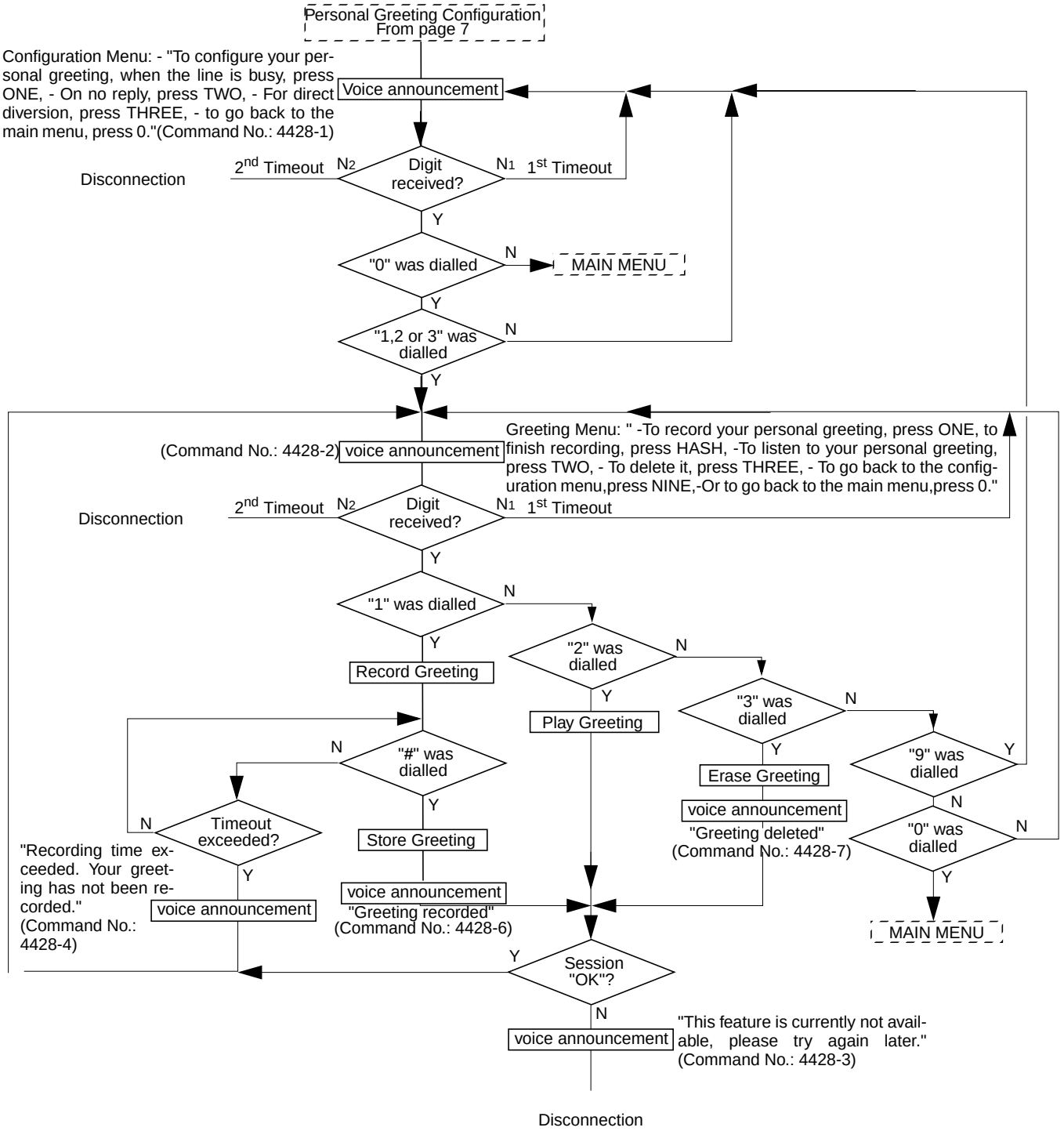

from page 7
Call me message has been left
Y
N
"Call back message from <extension number>" (Command No.: 4412-4)
1.Message header
"To replay, press ONE, - For the next message, press TWO, - To delete it and call the extension, press STAR, - to delete it, press HASH." (Command No.: 4412-1)
voice announcement
Timeout for the second time
N2
Valid digits received?
N1
Invalid digits or Timeout for the first time
"1" was dialled
"2" was dialled
"*" was dialled
Leave the mailbox and erase the message
call the extension
"Message deleted" (Command No.: 4412-3)
message erased
2.Message header
"Call back message from <extension number>" (Command No.: 4412-4)
last message header
1.Voice message
"To replay, press ONE, for the next message, press TWO, - To delete it, press HASH. (Command No.: 4412-2)
2.Message
last message header
"End of messages. To go back to the main menu, press 0, to exit hang up." (Command No.: 4428-8)
2nd Timeout
Digit received?
1st Timeout
"0" was dialled?
MAIN MENU
Go to page 7
Disconnection

If the user is familiar with the procedure and knows, he/she does not have to wait until the entire voice announcements are sent, he/she may enter further digits also during the voice prompts, which will then be disconnected immediately.

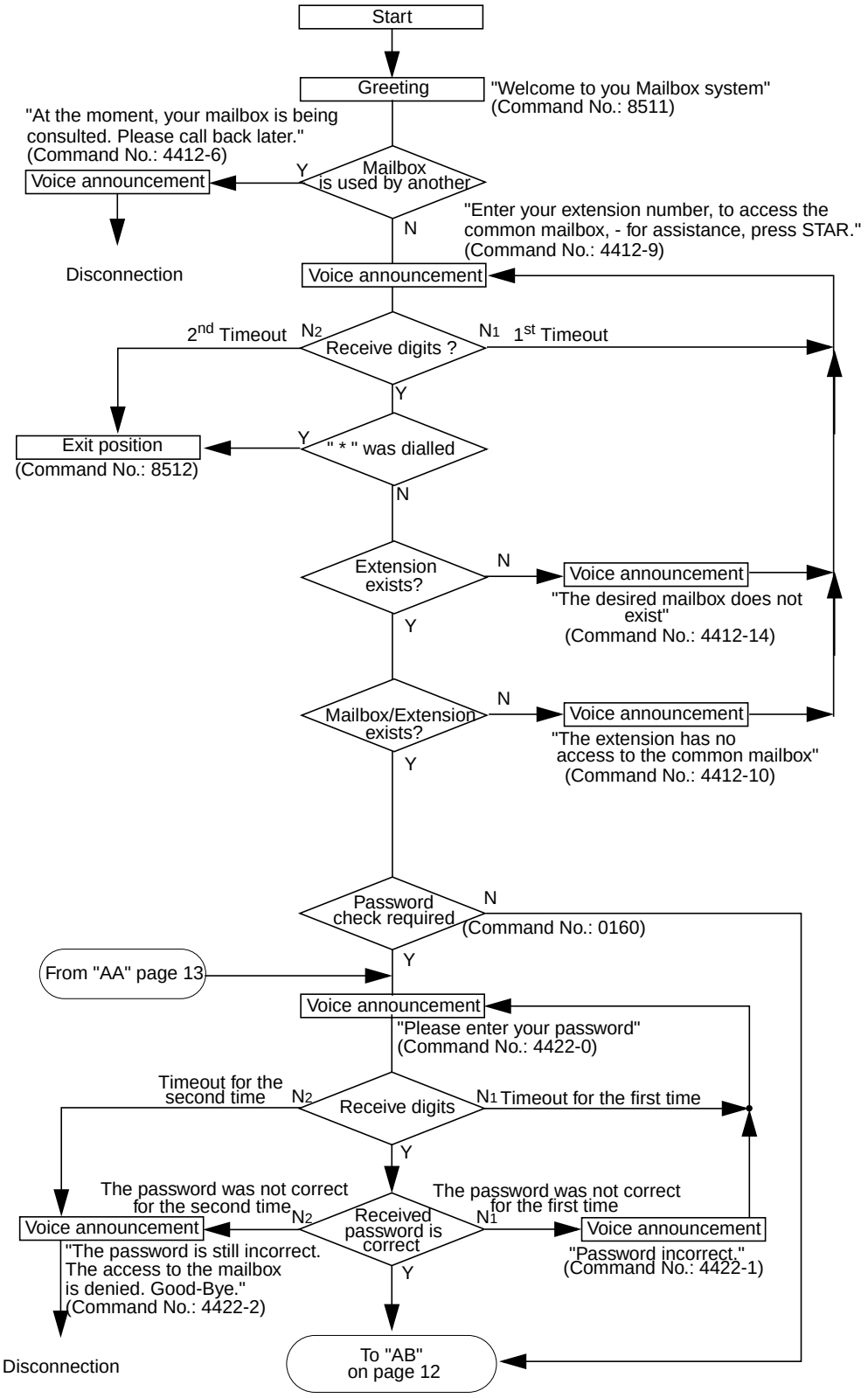
EXTERNAL RETRIEVING of messages from the INDIVIDUAL message system (or internal retrieving from another extension than the own one):

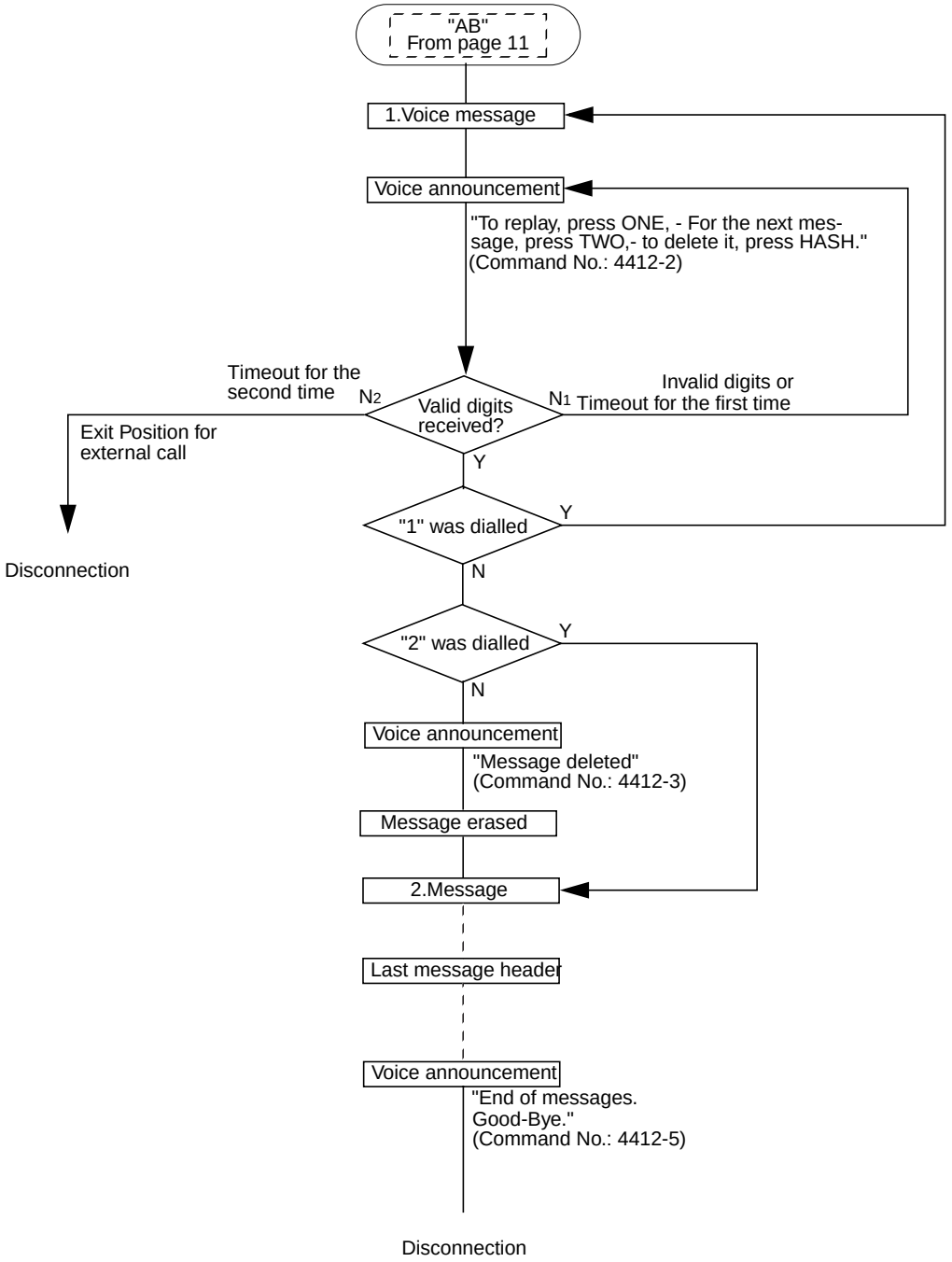


Configuration of Personal Greeting

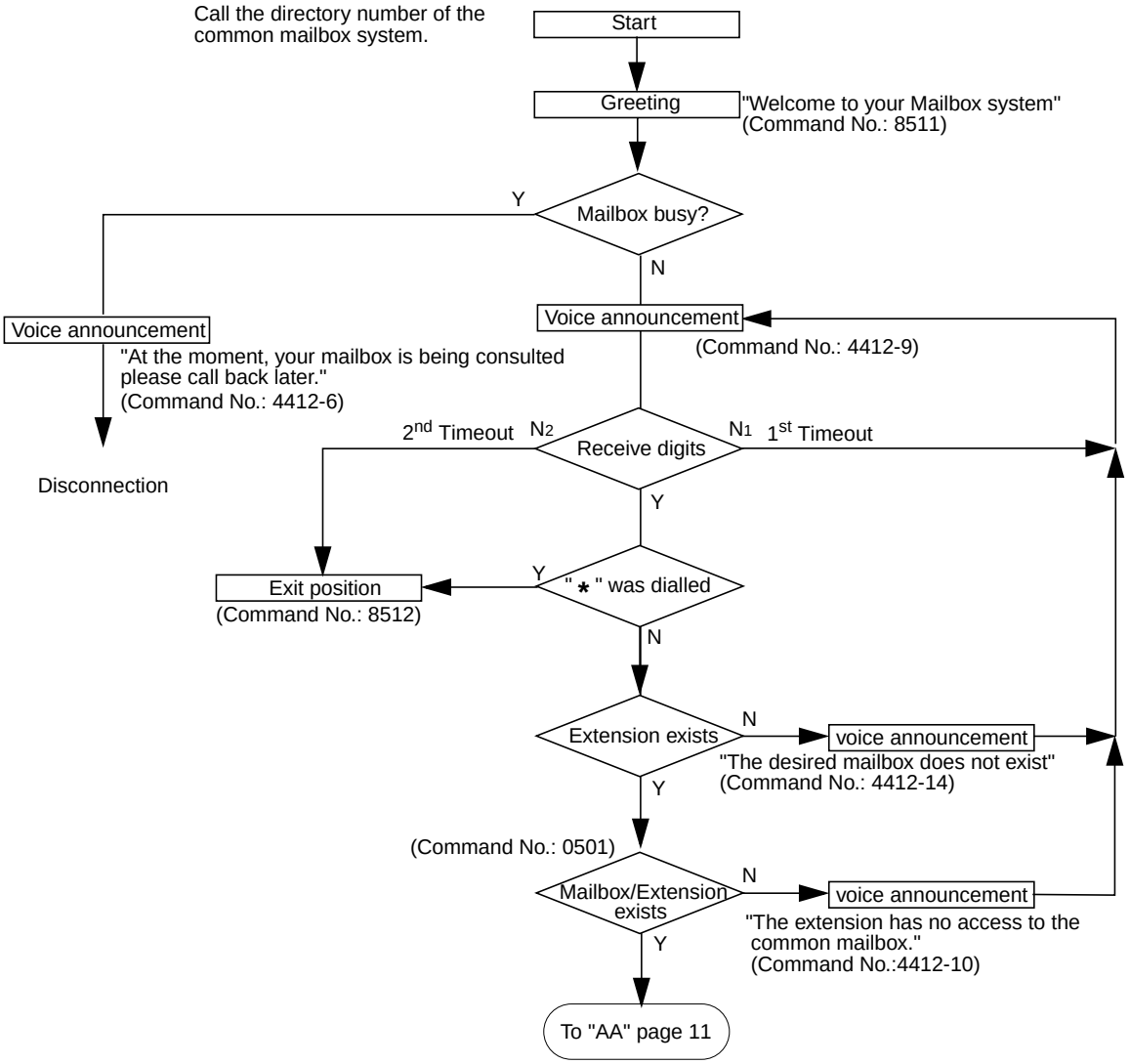


INTERNAL RETRIEVING of messages from the COMMON mailbox system: for users of analogue*- and system telephones (except EXECUTIVE and OPERATOR Telephone) *with limitations




"AB"
From page 11
1.Voice message
Voice announcement
"To replay, press ONE, - For the next mes-
sage, press TWO,- to delete it, press HASH."
(Command No.: 4412-2)
Timeout for the
second time
N2
Valid digits
received?
N1
Invalid digits or
Timeout for the first time
Exit Position for
external call
Disconnection
Y
"1" was dialled
Y
N
"2" was dialled
Y
N
Voice announcement
"Message deleted"
(Command No.: 4412-3)
Message erased
2.Message
Last message header
Voice announcement
"End of messages.
Good-Bye."
(Command No.: 4412-5)
Disconnection

EXTERNAL RETRIEVING of messages from the COMMON mailbox system or internal retrieving from another extension than one's own:



Capacity

The maximum number of message keys is for the:

- BASIC DBC 210 = 3
- ECONOMYplus DBC 211 = 4
- STANDARD DBC 212 = 4
- EXECUTIVE DBC 213 =14
- OPERATOR DBC 214 = 3
- KEY PANEL =17

Old telephones:

- BASIC DBC 199 = 0
- ECONOMY DBC 601 = 0
- ECONOMY DBC 751 = 0
- STANDARD DBC 631 =10
- STANDARD DBC 755 =10
- EXECUTIVE DBC 662 =30
- EXECUTIVE DBC 753 =30
- OPERATOR DBC 663 =20
- OPERATOR DBC 754 =20

The only limit in the number of messages that an extension can send or receive is the total capacity of 1000 messages the system can handle.

The number of voice messages is also limited by the available capacity on the MFU and VMU-HD board.

Messages are protected in the event of power failure.

Limitations

Cold start of the system

All recorded messages will be erased, if a cold start is invoked!

Retrieving messages

It is not possible for two callers to retrieve messages from the same mailbox at the same time.
System telephones with display get the message:

EXECUTIVE Telephone

```
10 Jul 14:40   +15°
FUNCTION BLOCKED BY ANOTHER USER
```

STANDARD Telephone

```
10 Jul 14:40   +15°
BL. BY ANOTHER USER
```

OPERATOR Telephone

```
10 Feb 14:40  +15°
C= 0 I= 0

FUNCTION BLOCKED BY ANOTHER USER
```

Users of telephones without a display or users who retrieve messages externally get a voice announcement, informing them that someone else retrieves the messages for the desired mailbox at the moment.

Retrieving messages via transferring a call

It is not possible to transfer a call to a mailbox for retrieving messages from the mailbox-system.

Congestion of speech channels

The MFU suppports 4 speech channels. The VMU-HD has a capacity of 8 or 16 speech channels.
The function "retrieving messages" has lower priority than the voice announcements to the customer (during ACD applications, storing messages, ...). To prevent that too many channels are blocked simultaneously by the retrieving function, it is possible to restrict the access to all channels.

If no voice channels are free for internal retrieving the following message is shown on the display (if any) of the caller:

EXECUTIVE Telephone

```
 10 Jul 14:40   +15˚
CONGESTION TRY LATER
```

STANDARD Telephone

```
10 Jul 14:40   +15˚
CONGESTION TRY LATER
```

OPERATOR Telephone

```
10 Feb 14:40  +15˚   ‖
C= 0 I= 0            ‖
                     ‖
CONGESTION TRY LATER
```

If no voice channels are free, external retrievers or telephone sets without a display will receive the ringing tone until a voice channel becomes free again.
If there is no free voice channel within timeout, the external caller will be rerouted to the reroute position of the relevant trunk.

Number of common mailboxes in a hotel system

The number of common mailboxes in a mailbox system is 16.
If ASB15002 is programmed as a hotel system the number of common mailboxes is limited to 5.

The reason for this limitation is the number of possible voice announcements !

There are 16 different voice announcements available.

When storing messages a guest will hear the greeting announcement in his/her check-in language so 3 different voice announcements have to be programmed for each common mailbox.

EXIT Position has activated call forwarding to the mailbox system

If a caller was routed to the EXIT position he/she cannot be rerouted back to the mailbox system via an activated call diversion (direct, on busy or on no reply) or follow-me.
If the EXIT position has activated any call forwarding to the mailbox system, the calling party will NOT be diverted.

Disconnection signal detection

When recording a voice message it is not necessary to record a silence or disconnection signal.

There are four line signal schemes (6, 7, 27 and 38) which do not have an active disconnection signal of the A-party in the line signalling. On the analogue trunk board the Tone Receiver Circuit (TRC) is will detect the disconnection tone also for these line signal schemes. When a disconnection tone is detected at the TRC, the connection will be released.

To define the cadence of the disconnection tone three commands (1420-1422) have to be programmed. (See chapter "Programming" for more information)

An automatic silence detection is implemented in the system. You may change the values according to your own needs.

NOTE: Messages shorter than 1 second will not be recorded.

Programming

Categorisation

0101
Facility COS

Each extension is assigned to a facility category (class of service) that has the desired mailbox functions:

```
10 Jul 14:40   +15°
FACILITY COS     C     0101 xxxx       zz
 backward    forward      c/i       return
```

xxxx Enter extension's directory number

zz Enter relevant facility category (0 - 15)

For programming of the facility category list, see MESSAGE SYSTEM, document 341/155 34-ASB 150 02 Uen.

1029
Tenant Group

The command defines to which tenant group the trunk belongs to. The ASB 150 can divide the trunks among a maximum of 16 tenants.

4314
Simultaneous retrievings

This command is used to restrict the number of callers simultaneously retrieving messages from the mailbox system.
This is special important when messages are retrieved from extensions without display or from external callers. In these cases voice prompts are used to guide the caller through the retrieving session. Also when a caller is sending messages voice prompts are used to guide a caller through a storing session.

To play voice prompts a voice channel is required.

To avoid that the storing of messages is blocked because several retrieving sessions are guided by voice prompts, the number of simultaneous retrieval sessions can be limited.

```
 10 Jul 14:40   +15°
SIMULT.RETRIEVINGS      4314              z
  backward    forward                 return
```

z Enter the number of simultaneous retrieving processes.
values: 1 - 16
Default data: 2

0160
Password check retrieving messages internally ?

To avoid a unauthorized internal retrieving of messages a password check (=authorisation code) can be programmed. For external retrieving and retrieving messages from other telephones than one's own, the password check will always be performed.

```
 10 Jul 14:40   +15°
PASSW.CHECK INT?  C   0160     xxxx        z
  backward    forward      c/i       return
```

xxxx Enter extension's directory number

z Enter relevant function.
Y = Check password for internal retrieving of messages.
N = Skip password check for internal retrieving of messages. (Default data)

NOTE: Before programming this command, you need to set command 0117 to YES!

0151
Tenant Group

This command defines which tenant group the extension belongs to.

Common mailbox

5427
Create common mailbox

This command is used to create a common mailbox directory number (mailbox number: 0-15).
NOTE: see command 0501 to state which extensions have access to the common mailbox.

5527
Delete common mailbox

This command is used to delete a common mailbox directory number (mailbox number: 0-15).

5627
Alter common mailbox

This command is used to alter a common mailbox directory number (mailbox number: 0-15).

0501
Access to common mailbox

This command specifies from which common mailbox the extension can retrieve messages.
NOTE: This command has NO influence for storeing messages to common mailboxes.
The moment a common mailbox is created, it is possible to store messages to it.

```
 10 Jul 14:40   +15°
ACCESS COMMON M-BOX C 0501   xxxx   yy     z
  backward    forward      c/i       return
```

xxxx — Enter extension directory number

yy — Enter common mailbox number (value = 0-15)

z — Enter relevant function.
N = Extension has NO access to common mailbox. (Default data)
Y = Extension has access to common mailbox.

3052
Program common message key ?

Is extension allowed to program a "common mailbox key" ?

```
 10 Jul 14:40   +15°
PROG COMMON MESSAGE  C  3052        xx    z
  backward    forward      c/i       return
```

xx — Enter COS number

z — Enter relevant function.
Y = Extension is allowed to program a common mailbox key.
N = Extension is NOT allowed to program a common mailbox key.
(Default data)

0301
Function of key

This command assigns the specified function to a programmable key. In this case the programmable key has to be programmed for "Common mailbox key".

```
 10 Jul 14:40   +15°
FUNCTION OF KEY   C  0301   xxxx     yy   zz
  backward    forward      c/i       return
```

xxxx — Enter extensions directory number

yy — Enter key number
Key A-Z or PICKUP (= " / ")

zz — Enter relevant function number
(Number of Common mess. key = " 18 ")

0302
Associated number

This command assigns the specified function to a programmable key. In this case it has to be programmed which common mailbox directory number is related to the "Common mailbox key".

```
 10 Jul 14:40   +15°
ASSOCIATED NUMBER   C  0302   xxxx   yy  zzzz
  backward    forward      c/i       return
```

xxxx	Enter the extensions directory number
yy	Enter key number Key A-Z or PICKUP (= " / ")
zzzz	Enter the relevant Common mailbox directory number

8507
Common mailbox - language 1

When an extension or external party is diverted to the mailbox system to leave a message in a common mailbox (command 5427), a welcome announcement is played to inform the caller that he/she is now diverted to a mailbox.
When entering the mailbox system to retrieve messages from the common mailbox system the caller is greeted by a welcome message for retrieving.
If ASB15002 is configured as a hotel exchange, three different language codes exist. A guest is assigned to a language code during the check in procedure. When a guest is diverted to a common mailbox a welcome message according to the language of the guest is played.

To state a language code see commands 8009-8011.

It is possible to record one greeting for each common mailbox.

```
 10 Jul 14:40   +15°
WELCOME COMMON      C    8507      yy    zz
  backward    forward      c/i       return
```

yy	Enter common mailbox number (value = 0-15)
zz	Enter greeting number, language 1 (value: 0-15) *NOTE:* The greeting has to be recorded first (Command No.:4417).

8508
Welcome common - language 2

(explanation: see command 8507)

```
 10 Jul 14:40   +15°
WELCOME COMMON LANG2    C  8508      yy    zz
  backward    forward      c/i       return
```

yy	Enter mailbox number (value: 0-15)
zz	Enter greeting number, language 2 (value: 0-15) *NOTE:* The greeting has to be recorded first (Command No.: 4417).

8509
Welcome common - language 3

(explanation: see command 8507)

```
 10 Jul 14:40   +15°
WELCOME COMMON LANG3    C  8509      yy    zz
  backward    forward      c/i       return
```

yy	Enter mailbox number (0-15)
zz	Enter greeting number, language 3 (value: 0-15) *NOTE:* The greeting has to be recorded first (Command No.: 4417).

8511
Retrieve welcome common mailbox

When an internal extension or external party calls the directory number of the common mailbox directly, a retrieving session of messages from the mailbox is started. Then the caller is greeted by a welcome announcement.
This command states the voice reference for the welcome announcement. One announcement for each existing common mailbox can be stated.

```
 10 Jul 14:40   +15°
RETRIEVE WELCOME COMMON C  8511    yy    zz
  backward    forward      c/i       return
```

yy — Enter common mailbox number (value: 0-15)
zz — Enter greeting number (value: 0-15)
NOTE: The greeting has to be recorded first (Command No.: 4418).

Individual mailbox

5426
Create individual mailbox system

This command is used to create the individual mailbox system directory number. The directory number is used to divert the extension to the individual mailbox and to retrieve messages from the individual mailbox.

NOTE: see command 3080 to state which extensions have access to the individual mailbox system.

5526
Delete individual mailbox system

This command is used to delete the individual mailbox system directory number.

5626
Alter individual mailbox system

This command is used to alter the individual mailbox system directory number.

3080
Receive message ?

This command specifies which ACOS (A-categories) are allowed to receive individual messages by diverting the extension to the message system and to retrieve messages externally.

```
10 Jul 14:40   +15°
RECEIVE MESSAGE    C   3080     xx        z
 backward    forward       c/i       return
```

xx — Enter ACOS value (value: 0-15)

z — Enter relevant function.
Y = Calling party with specified ACOS is allowed to receive messages.
N = ACOS is NOT allowed to receive messages. (Default data)

4312
Short message store ?

When an external party is diverted to the mailbox system, an opportunity to leave the mailbox system and to be connected to the exit position is given.

With this command it is possible to skip this opportunity. In this case the external caller will just get the welcome message and the voice prompts how to leave a message. (See procedure "Recording a message")

```
 10 Jul 14:40   +15°
SHORT MESSAGE STORE      4312            z
  backward   forward                 return
```

z — Enter relevant function.
N = Short storage procedure is not used (Default data)
Y = Short storage procedure is used

Individual welcome message

When an extension has activated diversion to the mailbox system, all incoming calls are diverted to the "storing of messages"-facility. The caller (internal or external) will be guided through the session by voice prompts.
At first he/she receives a greeting, to explain that the called extension has activated diversion to the mailbox system.

Case1:
If the extension directory number shall be included, in the greeting there will be the following voice prompts:

"*greeting1, storing* (8501) + *directory number* (8502) + *greeting 2, storing* (8503)"

Example:
"Welcome to Ericsson Austria, the desired extension" + "1" "2" "3" "4" + "has activated the mailbox"

Case 2:
If the extension directory number shall NOT be included there will be only following voice prompt:

"*greeting1, storing* (8501)"

Example:
"Welcome to Ericsson Austria. The desired extension has activated the mailbox"

8501
Individual welcome number 1

This command states the reference number for part one of the greeting, to be played when a caller is diverted to the message system.

```
 10 Jul 14:40   +15°
INDIVID WELCOME NO1    C 8501      yy     zz
  backward    forward      c/i       return
```

yy — Enter tenant number (value = 0-15)
zz — Enter welcome message number (value = 0-31)

NOTE: The welcome message has to be recorded first (Command No.: 4415).

8502
Directory number welcome individual ?

This command defines whether or not the directory number of the extension having activated the diversion to the mailbox system shall be included in the greeting.

```
 10 Jul 14:40   +15°
DIR NO IN WELC IND?    C 8502      yy      z
  backward    forward      c/i       return
```

yy — Enter tenant number (value = 0-15)
z — Enter relevant function
Y = Directory number is included in the greeting.(Default data)
N = Directory number is not included in the greeting.

NOTE: Before programming this command the digit prompts have to be recorded (Command no.: 4419)

8503
Individual welcome number 2

This command states the reference number for part two of the welcome message when a call is diverted to the mailbox system.

This command has no function if command 8502 is programmed to NO !

```
 10 Jul 14:40   +15°
INDIVID WELCOME NO2    C  8503      yy    zz
  backward    forward      c/i       return
```

yy Enter tenant number (value = 0-15)
zz Enter welcome message number (value = 0-31)
NOTE: The welcome message has to be recorded first. (Command No.: 4415)

8510
Individual welcome retrieving

When an extension (internal or external) calls directly to the mailbox system, a retrieving session of individual messages is started. The caller is then greeted by a welcome announcement.
In this command the voice reference for the announcement is stated.
It is possible to state one announcement for each tenant group.

```
 10 Jul 14:40   +15°
INDIVID WELCOME RET  C  8510      yy    zz
  backward    forward      c/i       return
```

yy Enter tenant number (value = 0-15)
zz Enter welcome message number (value = 0-15)
NOTE: The welcome announcement has to be recorded first. (Command No.: 4416)

8512
Exit position for individual message

An external caller who is diverted to the mailbox system has the possibility to be connected to another extension instead of leaving a message. This is the directory number the external caller will be rerouted to. For each tenant group an exit position can be specified.

If no directory number is specified, the external caller is routed to the rerouting position of the relevant trunk. If it is an internal call, the call will be disconnected.

```
 10 Jul 14:40   +15°
EXIT POS INDIVID MSG C 8512   yy     xxxx
  backward    forward      c/i       return
```

yy Enter tenant group number (value = 0-15)

xxxx Enter exit-directory number

Commands 8601 to 8603 are related to welcome announcements for guest extensions.

A guest who leaves a message for another guest will receive the welcome announcement in the language he/she has been checked in.

8601
Welcome announcement no.1 for a guest

Each welcome announcement consists of two parts. Part one is ALWAYS played when a call is diverted to the mailbox system. If the directory number of the extension has to be played, part two of the welcome announcement is also played. This welcome message is used when a guest extension is diverted to the mailbox system.
In this command the reference number for part one of the welcome message (when an extension is diverted to the message system) is stated.
For part two of the welcome message, see command 8603.

```
 10 Jul 14:40   +15°
GUEST WELCOME NO1 C  8601       y    zz
  backward    forward      c/i       return
```

y Enter language number (value = 0 - 2)
zz Enter voice announcement number (value = 0 - 31)
NOTE: The greeting has to be recorded first. (Command No.: 4415)

8602
Play directory number in welcome message for a guest

When a guest extension is diverted to the mailbox system, a welcome announcement is played. In this command it is stated whether or not the directory number of the called guest extension shall be played.

If the extension directory number is included (YES) there will be following voice prompts:
"welcome no1 + directory number + welcome no2"

If the extension directory number is NOT included (NO) there will be only voice prompt "welcome no1"

```
 10 Jul 14:40   +15°
PLAY DIR NO IN WELC? C 8602     y     z
  backward    forward      c/i       return
```

y

Enter language number (value = 0 - 2)
z Enter relevant function.
Y = Directory number is included in the welcome voice prompt. (Default data)
N = Directory number is not included in the welcome voice prompt.

8603
Welcome announcement no.2 for a guest

Every welcome announcement consists of two parts. The first part is always played when a call is diverted to the mailbox system. If the directory number of the extension has to be played, part two of the welcome announcement is also played. This welcome message is used when a guest extension is diverted to the mailbox system.

In this command the reference number for part two of the welcome message (when an extension is diverted to the mailbox system) is stated.
For part one of the welcome message, see command 8601.

```
 10 Jul 14:40   +15°
GUEST WELCOME NO2 C  8603       y    zz
  backward    forward      c/i       return
```

yy Enter language number (value = 0 - 2)
zz Enter voice announcement number (value = 0 - 31)
NOTE: The greeting has to be recorded first. (Command No.: 4415)

8604
Welcome announcement retrieving for a guest

When a guest extension calls directly to the mailbox system, by pressing the msg-key or dialing " * 59 # ", a retrieving session of messages is started. The caller is then greeted by a welcome message.
In this command the voice reference number for the announcement is stated. It is possible to state one announcement for each language code. So the guest will be greeted by the language code given at check in.

```
 10 Jul 14:40   +15°
GUEST RETR.WELCOME C 8604      y      zz
  backward    forward      c/i       return
```

y Enter language number (value = 0-2)
zz Enter reference number for voice announcement (value = 0-15)
NOTE: The voice announcement has to be recorded first.(Cmd. No.: 4416)

Voice message prompts

4412
Voice message prompts - language 1

```
 10 Jul 14:40   +15°
VOICE MSG PRMPT  0-14  4412                >
  backward    forward                 return
```

Press ENTER to go to level 2 and to enter the voice message prompt number for language 1.

```
 10 Jul 14:40   +15°
VOICE MESSAGE PROMPT NUMBER:                yy
                                          return
```

yy Enter the number of voice prompt (0-14)

Modify the specified voice message prompt by pressing one of the function keys.

```
 10 Jul 14:40   +15°
XXXXXXXXXXXXXXXXXXXXX
 record    play-back      erase      return
```

F1 To record a voice message prompt
F2 To listen to a stored voice mess. prompt
F3 To erase a stored voice message prompt
F4 To return to level 2

XXXXXX 0 STORING INSTRUCTION

"After the tone, please record your message."

1 INSTRUCTION CALL ME

"To replay, press ONE, - For the next message, press TWO, - To delete it and call the extension, press STAR, - to delete it, press HASH."

2 INSTRUCTION VOICE

"To replay, press ONE, - For the next message, press TWO, - To delete it, press HASH.

3 MESSAGE IS ERASED

"Message deleted."

4 CALL ME MESSAGE

"Call back message from"

5 NO MORE MESSAGES

"End of messages. Good-Bye."

6 BLOCKED, USED BY OTHER

"At the moment, your mailbox is being consulted. Please call back later."

7 LEAVE MESSAGE OR EXIT

"To leave a message in the mailbox press NINE, or wait, - For assistance, press STAR."

8 IDENT DIRECTORY NUMBER INDIVIDUAL

"Please enter your mailbox number, - For assistance, press STAR."

9 IDENT DIRECTORY NUMBER COMMON

"Enter your extension number, to access the common mailbox, - For assistance, press STAR."

10 NO ACCESS TO THE COMMON MAILBOX

"The extension has no access to the common mailbox."

11 WELCOME TO DIRECTORY NUMBER.

"Welcome to mailbox ..."

12 CONFIRM DIRECTORY NUMBER

"If this is correct, press STAR, - To select another mailbox, press HASH."

13 NO MAILBOX FOR DIRECTORY NUMBER

"The desired extension has no mailbox."

14 EXTENSION DOES NOT EXIST

"The desired mailbox does not exist."

4413
Message prompts - language 2

```
 10 Jul 14:40   +15°
MSG PRMPT LANG2 0-6       4413            >
 backward    forward                  return
```

Press ENTER to go to level 2 and to enter the voice message prompt number for language 2.

```
 10 Jul 14:40   +15°
VOICE MESSAGE PROMPT NUMBER LANG2:        y
                                        return
```

y Enter the voice message prompt number (0 - 6)

Press ENTER to accept and to go to level 3.

Modify the specified voice message prompt language 2 by pressing one of the function keys.

```
 10 Jul 14:40   +15°
XXXXXXXXXXXXXXXXXXXXXX
 record    play-back      erase      return
```

XXXXXX
0 STORING INSTRUCTION
1 INSTRUCTION CALL-ME
2 INSTRUCTION VOICE
3 MESSAGE IS ERASED
4 CALL ME MESSAGE
5 NO MORE MESSAGES
6 BLOCKED, USED BY ANOTHER

(required text see "language 1")

4414
Message prompts - language 3

```
10 Jul 14:40   +15°
 MSG PRMPT LANG3  0-6     4414            >
  backward  forward      c/i       return
```

Press ENTER to go to level 2 and to enter the voice message prompt number for language 3.
(see command 4413)

Voice prompts - Individual mailbox

4415
Welcome individual

Announcements for greeting individual

```
 10 Jul 14:40   +15°
WELCOME INDIVID   0-31     4415            >
  backward    forward                 return
```

0 to 31 possible announcements

Press ENTER to go to level 2 and to enter the individual greeting prompt number.

```
 10 Jul 14:40   +15°
WELCOME INDIVIDUAL NUMBER:                yy
                                        return
```

yy	Enter the number of the individual greeting prompt. (value = 0-31)
F4	Press to return to level 1.

Press ENTER to accept and to go to level 3.

Modify the specified individual greeting prompt by pressing one of the function keys.

```
 10 Jul 14:40   +15°
WELCOME INDIVIDUAL NUMBER:                yy
 record    play-back      erase      return
```

F1	To record an individual greeting prompt
F2	To listen to a stored indiv. greeting prompt
F3	To erase a stored indiv. greeting prompt
F4	To return to level 2.

4416
Retrieving individual

Announcements for retrieving individual

```
 10 Jul 14:40   +15°
RETRIEVE INDIV  0-15     4416              >
  backward    forward                 return
```

0 to 15 possible announcements

Press ENTER to go to level 2 and to enter the individual retrieving prompt number.

```
 10 Jul 14:40   +15°
RETRIEVE INDIVIDUAL NUMBER:               yy
                                        return
```

yy	Enter the number of the individual retrieving prompt (value = 0-15).
F4	Press to return to level 1.

Press ENTER to accept and to go to level 3.

Modify the specified individual retrieving prompt by pressing one of the function keys.

```
 10 Jul 14:40   +15°
RETRIEVE INDIVIDUAL NUMBER:               yy
 record    play-back      erase      return
```

F1	To record an individual retrieving prompt
F2	To listen to a stored ind. retrieving prompt
F3	To erase a stored ind. retrieving prompt
F4	To return to level 2

Voice prompts - Common mailbox

4417
Welcome common

Message greeting - storing common mailbox

```
 10 Jul 14:40   +15°
WELCOME COMM.   0-15     4417              >
  backward    forward                 return
```

0 to 15 possible announcements

Press ENTER to go to level 2 and to enter the common greeting prompt number.

```
 10 Jul 14:40   +15°
WELCOME COMMON NUMBER:                    yy
                                        return
```

yy	Enter the number of the common welcome prompt (value = 0-15).
F4	Press to return to level 1.

Press ENTER to accept and to go to level 3.

Modify the specified common welcome prompt by pressing one of the function keys.

```
 10 Jul 14:40   +15°
WELCOME COMMON NUMBER:                    yy
 record    play-back      erase      return
```

F1	To record a common welcome prompt
F2	To listen to a stored common welcome prompt
F3	To erase a stored common welcome prompt
F4	To return to level 2

4418
Retrieving common

Message greeting - retrieving common mailbox

```
 10 Jul 14:40   +15°
RETRIEVE COMM.   0-15     4418            >
  backward    forward               return
```

0 to 15 possible announcements

Press ENTER to go to level 2 and to enter the common retrieving prompt number.

```
 10 Jul 14:40   +15°
RETRIEVE COMMON NUMBER:                  yy
                                       return
```

yy	Enter the number of the common retrieving prompt (value = 0-15).
F4	Press to return to level 1.

Press ENTER to accept and to go to level 3.

Modify the specified common retrieving prompt by pressing one of the function keys.

```
 10 Jul 14:40   +15°
RETRIEVE COMMON NUMBER:                  yy
 record    play-back      erase      return
```

F1	To record a common retrieving prompt
F2	To listen to a stored common retrieving prompt
F3	To erase a stored common retrieving prompt
F4	To return to level 2

Digit prompts

4419
Digits

Announcements for digits - language 1

```
 10 Jul 14:40   +15°
DIGITS 0-9                4419            >
  backward    forward               return
```

Press ENTER to go to level 2 and to enter the digit prompt number for language 1.

```
 10 Jul 14:40   +15°
DIGIT NUMBER:                             z
                                       return
```

z	Enter the number of the digit prompt. (value = 0-9)
F4	Press to return to level 1.

Press ENTER to accept and to go to level 3.

Modify the specified digit prompt by pressing one of the function keys.

```
 10 Jul 14:40   +15°
DIGIT NUMBER:                             z
 record    play-back      erase      return
```

F1	To record a digit prompt
F2	To listen to a stored digit prompt
F3	To erase a stored digit prompt
F4	To return to level 2.

4420
Digits - language 2

Announcements for digits - language 2

```
 10 Jul 14:40   +15°
DIGITS 0-9 LANG 2        4420            >
  backward    forward                return
```

Press ENTER to go to level 2 and to enter the digit prompt number for language 2.

(see command 4419)

4421
Digits - language 3

Announcements for digits - language 3

```
 10 Jul 14:40   +15°
DIGITS 0-9 LANG 3        4421            >
  backward    forward                return
```

Press ENTER to go to level 2 and to enter the digit prompt number for language 3.

(see command 4419)

Voice prompts for Individual and Common mailbox systems

4422
Common voice prompts

```
 10 Jul 14:40   +15°
COMM VOICE PRMPT  0-2     4422           >
  backward  forward     c/i       return
```

0 to 2 possible announcements

Press ENTER to go to level 2 and to enter the common mailbox voice prompt number.

```
 10 Jul 14:40   +15°
SYSTEM PROMPT NUMBER:                    z
                                    return
```

z — Enter the number of the voice prompt.
- 00 password
  Asks for the password (=authorisation code) for identified extension
- 01 password wrong
- 02 password wrong + exit

F4 — Press to return to level 1.

Press ENTER to accept and to go to level 3.

Modify the specified voice prompt by pressing one of the function keys.

```
 10 Jul 14:40   +15°
XXXXXXXXXXXXXXXXXXX:                     z
 record    play-back      erase      return
```

XXXX
- 0 ENTER PASSWORD
  "Please enter your password."
- 1 WRONG PASSWORD 1-st
  "Password incorrect."
- 2 WRONG PASSWORD 2-nd
  "The password is still incorrect. The access to the mailbox is denied. Good-Bye."

F1 To record a voice prompt
F2 To listen to a stored voice prompt
F3 To erase a stored voice prompt
F4 To return to level 2.

4428
Voice message prompts - Personal Greeting

0 RETRIEVE/CONFIGURE

"Main Menu: - To listen to your messages, press ONE, - To configure the mailbox press TWO."

1 CONFIGURE PERS. GREET.

"Configuration Menu: - To configure your personal greeting, when the line is busy, press ONE, - On no reply, press TWO, - For direct diversion, press THREE, - to go back to the main menu, press Oh (0)."

2 RECORD PERS. GREET

"Greeting Menu: - To record your personal greeting, press ONE, to finish recording, press HASH, -To listen to your personal greeting, press TWO, - To delete it, press THREE, - To go back to the configuration menu, press NINE, - Or to go back to the main menu, press Oh (0)."

3 ERROR

"This feature is currently not available, please try again later."

4 ERROR

"Recording time exceeded. Your greeting has not been recorded."

5 ERROR

"No greeting recorded."

6 RECORD PERS. GREET

"Greeting recorded."

7 ERASE PERS. GREET

"Greeting deleted."

8 EXIT PERS. GREET

"End of messages. - To go back to the main menu, press Oh (0), - to exit, hang up."

Time restrictions

4301
Maximum time for speech messages

It is possible to program a maximum time for a voice message.

```
10 Jul 14:40   +15°
MAX TIME SPCH MESS    4301          zzz
 backward    forward                return
```

zzz Enter number of seconds (0 - 255). Default value 12 seconds

NOTE: We recommend that the maximum time for voice messages should NOT be lower than 30 seconds !

4304
Time to keep message

A message will normally be stored for at least 24 hours.

A longer storage time can be programmed, if required.

```
10 Jul 14:40   +15°
TIME TO KEEP MESS    4304           zz
 backward    forward                return
```

zz Enter number of 24 hours periods (1 - 99). Default value = 1

NOTE: We recommend to set the storage time for voice messages to more than 1 day. (e.g. 7 days).

4308
Number answer to sender (days)

This command defines the number of days that a message may remain unanswered before it is returned to the sender. (Only accessable for EXECUTIVE- and OPERATOR Telephones)

This command will only be valid for internal messages. Messages from external caller will NOT be returned to the sender.

NOTE: The number of days in command 4304 must be > the number of days stated in command 4308 for messages to be returned.

```
10 Jul 14:40   +15°
TIME TO RETURN MESS    4308          zz
 backward    forward              return
```

zz — Enter relevant number of days (0 - 99).
Default data = 1
If 0 is entered, the call is returned at midnight of the same day

NOTE: We recommend that the storage time for unanswered voice messages should be more than 1 day.

4309 - 4311
Keep answered message

It is possible to define for each type of message how many answered messages should be saved for future reading.

Each stored message to the same extension decreases the space for unanswered messages.

Default data = 0 means that a message will be erased automatically when it is answered (see "internal retrieval of messages" in this document).

```
10 Jul 14:40   +15°
KEEP ANSWERED CALLME    4309          zz
 backward    forward              return
```

zz — Enter number of call-back messages to be stored (0 - 99).
Default data = 0

```
10 Jul 14:40   +15°
KEEP ANSWERED VOICE     4310          zz
 backward    forward              return
```

zz — Enter number of voice messages to be stored (0 - 99).
Default data = 0

```
10 Jul 14:40   +15°
KEEP ANSWERED TEXT    4311            zz
 backward    forward              return
```

zz — Enter number of text messages to be stored (0 - 99).
Default data = 0

NOTE: For retrieving stored messages see MESSAGE SYSTEM, document 341/155 34-ASB 150 02 Uen.

Functions for VMU-HD boards

4305
High message quality ?

Voice messages can be stored with a lower voice quality so that the storage time is increased.

```
10 Jul 14:40   +15°
HIGH MESS QUALITY?      4305            z
 backward    forward                return
```

z — Enter relevant function.
Y = High speech quality.
N = Normal speech quality (default data)

4601
Record message allowed?

It is possible to prevent messages from being stored on defined voice memory boards.

```
10 Jul 14:40   +15°
REC MESS ALLOWED?    C  4601  uuvv       z
 backward  forward       c/i     return
```

uuvv — Enter board position of relevant VMU-HD board (01 - 63) and 00

z — Enter relevant function.
Y = Board may be used for voice messages (default value).
N = Board may not be used for voice messages

4603
Block board for voice answer

It is possible to determine whether or not a certain VMU board may be used for voice answer.

```
10 Jul 14:40   +15°
REC ANNO ALLOWED ?    4603 xxyy        z
 backward  forward     c/i      return
```

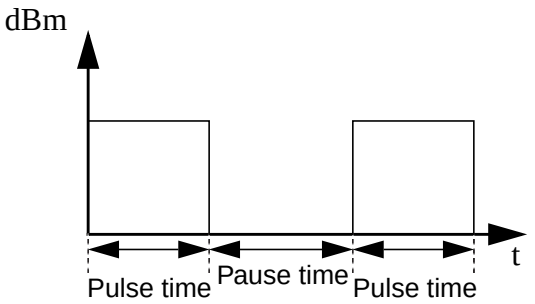
xxyy — Enter board position (01 - 63) and 00

z — Enter relevant function:
Y = Voice answer may be stored on board
N = Voice answer may not be stored on board

NOTE: If you want to programm the commands1420-1422 and 4315, 4316, this command has to be set to "YES".

Disconnection signal detection

Commands 1420 - 1422 are used to define the cadence of the tone and the time before disconnection from the external A-party is accepted. (These commands are only accessible by RASC)



1420
Number of disconnection tone bursts

Default data = 3

1421
Pulse time for disconnection tone bursts

Default data = 300 ms

1422
Pause time for disconnection tone bursts

Dafault data = 300 ms

Commands 4315 and 4316

Commands 4315 and 4316 determine values, that are necessary for silent detection

4315
Silent detection level

This command defines the silence detection level. A lower level is seen as silence. The value is represented as a signed binary number.

Receiver range: -70dBm to -20dBm
Default value: -40dBm

4316
Silent detection time

This command defines the silent detection time. A minimum period of silent time has to be detected to be seen as silence.

Time range: 0, 5 - 30 seconds
Default time: 10 seconds
Selecting 0 deactivates silence detection.

7801
RSU-group reservation

With this command it is possible to reserve each RSU-group (Register Signalling Unit) for one register signalling application. The 2 different applications are traffic register signalling and voice services. If no one of these are specified it will handle both.

Values: 0 = No RSU-groups reserved (default)
1 = reserved for traffic register signalling
2 = Reserved for voice services

Equipment

With a VMU-HD or MFU installed in the system the MAILBOX SYSTEM offers voice support to all types of incoming calls.

This function requires a DTMF receiver and a voice channel for every call.

The following boards offer DTMF receivers:

BTU-D
Has the capacity of 8 DTMF processes (receivers at one time)

MFU
up to 4 DTMF receivers only

REG

VMU-HD
Depending on the setting of the jumpers the VMU-HD offers 16 voice channels or 8 voice channels and 4 DTMF receivers.

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
SEA/TB/MP T.Preißner	SEA/TB/XE	341/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved	Kontr/Checked	Datum/Date / Rev	Tillhör/Referens-File/Reference
SEA/TB/MP		97-10-31 / B	ASB 150 02
		Database reference	
		341.fm	

MESSAGE SYSTEM

Definition

Message-system means that messages can be sent by extension users to other extension users in ASB 150 02.

A flashing lamp on system telephones indicates that a message is waiting.

On extensions with analogue telephones message waiting is indicated by a special dial tone that the user hears when he/she lifts the handset.

There are three kinds of message:

- "Call-back" message
- Voice message
- Text message

Use

Messages can be left when one wishes to gain contact with someone who does not answer or, for example, if one wants to send information to one or more extensions in the system.

The message function can be used to provide a short voice or text message, or merely to urge the called party to return the call.

"Call-back" message

Only the message lamp on the called system telephone is lit up.

The function is used when one wants the called extension to return the call.

Text and voice messages

One can send a short message by recording it or by entering it on the telephone display.

Serial messages

The same message can be sent to an optional number of extensions.

A sent serial message is not erased until all addressees have read or listened to the message.

Control of sent messages

It is possible to control whether a sent message has been read/listened to/erased.

Extension users can always check their own messages.

Extensions with special category can also check other extensions' messages. For example a hotel reception may check all messages that have been sent to guestroom extensions.

The system can be programmed so that a certain number of each message type can be stored in the memory even if the address has erased it.

It is also possible to check already answered messages.

This can be utilised also in hotel environments as the reception can then reaccess a message that may have been erased by mistake.

It is possible to protect the "control of sent messages" with a password (=authorisation code).

Automatic return of unread/unlistened to messages

All messages are stored for a predetermined (programmable) time. If, on expiry of this time, the message has not been read/listened to/erased it will recall the sender subject to the following prerequisites:

- Only telephones with display receive return messages.
- The extension has a category permitting return messages.

Only extensions with EXECUTIVE Telephones or OPERATOR Consoles can utilise the functions:

- voice message
- serial message
- return message
- reading of own and messages of others.

Operation

EXECUTIVE Telephone

Messages can be sent from both call state and idle state.

Procedures for sending messages described under BASIC -, ECONOMY - and STANDARD Telephones can also be used for EXECUTIVE Telephones.

To send messages in call state or speech state

Press **Message**-key.

The lamp for seized traffic function extinguishes, the message lamp flashes to confirm connection.

The ongoing call or conversation is disconnected.

The display shows both sender and address:

```
10 Jul 14:40   +15°
FROM NUMBER:    200  TO NUMBER:    202
          call-back   voice      text
```

Select relevant message type. See below.

NOTE: Only menus for those message types that are possible to the stated address are displayed.

Message from idle state

A message can be sent to any extension directly by pressing the **Message**-key from idle state.

The associated lamp flashes to confirm connection and the display shows the following:

```
10 Jul 14:40   +15°
SELECT FUNCTION
   send                check
```

Press menu key **send** to send a message whereupon the display shows:

```
10 Jul 14:40   +15°
FROM NUMBER     200  TO NUMBER:        _
    send  chnge-no            chnge-no
```

State the address by entering the relevant directory number and press **send**.

If you make an error, press **chnge-no.** for the address to effect a correction.

If you are authorized it is possible to change the sender. Press **chnge-no**. for the sender and enter the relevant directory number.

If you are sure that both address and sender are correct press **send** and the display shows the same image as when a message is sent in the call state.

```
10 Jul 14:40   +15°
FROM NUMBER:     200 TO NUMBER:    202
          call-back   voice     text
```

NOTE: Only menus for those messages that can be sent to the stated address are shown.
For example no text is shown if the address does not have a telephone with display.

Programming of message types

"Call-back" messages

Press menu key **call-back**.

The display shows:

```
10 Jul 14:40   +15˚
MESSAGE IS SENT. REPEAT TO ANOTHER ?
   yes       no
```

Press **no** if no more messages are to be sent.

Voice messages

Press menu key **voice**.

The system responds with a short tone burst as indication that recording has begun.

- Record the relevant message, handsfree or via the handset
- Press **send** to register the message.

During recording the following image is displayed:

```
10 Jul 14:40   +15˚
RECORDING                          012
 record   play-back   pause   activate
```

During recording the remaining time (012) is shown on the display.

Play back the message

If one wishes to play back the message before it is registered, press **play-back** and the recorded message will be played back via the handset or monitoring loudspeaker.

To rerecord the message

If one wishes to rerecord the message press **record** and the recording sequence will be repeated.

Pause during recording

Press **pause** to make a pause during the recording.

To send the voice message

When satisfied press **activate** and the message will be sent.

The display shows:

```
10 Jul 14:40   +15˚
MESSAGE IS SENT. REPEAT TO ANOTHER ?
 yes       no
```

Press **no** if no more messages are to be sent.

Text messages

Press **free-text** to enter a text message.

The display will then show:

```
10 Jul 14:40   +15˚
_
   send
```

It is now possible, via the keyset, to enter the relevant text, maximum 40 characters.

Press "**+**" to make a space.

Erasure of characters to the left of the cursor is obtained by pressing **"-"** -key.

How to enter text, see "TEXT MODE", document 483/155 34-ASB 150 02 Uen.

When the message is complete press **send** to register it.

The display shows:

```
10 Jul 14:40   +15˚
MESSAGE IS SENT. REPEAT TO ANOTHER ?
 yes       no
```

Press **no** if no more messages are to be sent.

Serial messages

After a message has been sent, it is possible to send the same message to other addresses.

The display shows:

```
10 Jul 14:40   +15°
MESSAGE IS SENT. SEND TO ANOTHER
 yes         no
```

Press the menu key **yes** and the following image will be displayed:

```
10 Jul 14:40   +15°
FROM NUMBER:     200 TO NUMBER:        _
    send  chnge-no            chnge-no
```

Enter the directory number for the next extension and press **send**.

The procedure can be repeated an unlimited number of times.

After the last address has been registered press **no** to disconnect.

Unless the menu key **no** or **Clear** is pressed within approximately 30 seconds, the message function will be disconnected automatically and the display will show idle state information.

To control sent messages

The messages that have been sent can be controlled to ascertain whether they have been read/listened to, erased or not erased.

To control one's own sent messages

Extensions can normally only control their own messages.

```
10 Jul 14:40   +15°
SELECT FUNCTION
   send               check
```

From the entry image press **check**.

It is programmable if there is a password (=authorisation code) check or not. If it is, the display shows:

```
10 Jul 14:40   +15°
ENTER PASSWORD:                       _
```

After that the display shows:

```
10 Jul 14:40   +15°
OWN MESSAGES SENT TO:                 _
  return             check   chng-no.
```

Enter the receiver number and press **check**.

The display shows:

```
10 Jul 14:40   +15°
SELECT MESSAGE TYPE
  return  call-back   voice    free-text
```

Select the message type by pressing a menu key corresponding to the message type to check.

Press **return** to revert to the previous image.

The display shows e.g. if **voice** has been selected:

```
10 Jul 14:40   +15°
JOHNSON ANDREW            200
    play     next      time     erase
```

- Press **play** for playback of first voice message or to read first text message
- Press **next** for display of next message
- Press **erase** to erase message
- Press **time** to read time when message was sent.

```
10 Jul 14:40   +15°
MESSAGE SENT:        12 AUG  17:24
                                return
```

Press **return** to revert to previous image.

To check mailboxes of other extensions

By assigning an extension user a certain category he/she can check messages that exist in the mailboxes of other (optional) extensions.

If an extension, e.g. a hotel reception, has the authority, on depression of the control key in the basic menu the user will see the following selection image:

```
10 Jul 14:40   +15°
CHECK MESSAGES - OWN OR OTHERS ?
  return              own      others
```

It may be programmed if there is a password (=authorisation code) check or not. If it is and **own** or **others** is selected, the display shows:

```
10 Jul 14:40   +15°
ENTER PASSWORD:                    _
```

If **others** was selected the following is shown:

```
10 Jul 14:40   +15°
RECEIVER NUMBER:                   _
  return              check   chnge-no.
```

Enter the directory number of the receiver that is to be controlled and press **check**.

The display shows:

```
10 Jul 14:40   +15°
JOHNSON ANDREW          202
  return              new       saved
```

It is now possible to choose between controlling unanswered or answered messages.

The display now shows the same selection image as for controlling own messages and the procedure is the same as described above in "To check one's own messages".

To receive messages

Incoming messages are indicated at the address by the message lamp flashing rapidly.

Press **Message**-key.

The display shows whether there exist new and/or return messages, that is own sent messages that have returned because no answer has been received within the time stipulated

```
10 Jul 14:40   +15°
SELECT FUNCTION
   send     receive   check  sent-back
```

- Press **receive** to answer new messages
- Press **sent-back** to answer return messages.

It may programmed if there is a password (=authorisation code) check or not. If it is and **receive** or **check** is selected, the display shows:

```
10 Jul 14:40   +15°
ENTER PASSWORD:                    _
```

After entering the right password (=authorisation code) the display shows:

```
10 Jul 14:40   +15°
SELECT MESSAGE TYPE
  return   call-back     voice       text
```

It is now possible to see which messages are stored.

Only those message types that exist are shown in the menu.

Select call-back, voice or free-text

When a key is pressed, the oldest message of the type selected will be displayed.

The display shows from whom the message comes:

```
10 Jul 14:40   +15°
JOHNSON ANDREW              202
    play      next      resend     erase
```

The menu keys have the following functions when the "**voice**"-key is pressed:

play = Play back relevant message.
A text message can be read via the same key.

next = Scroll to next message.
If no more messages of this type exist, the selection image is reaccessed and it is possible to ascertain whether other messages exist.

resend = Resend the return message whereby a new supervision time is set.

erase = Erase a certain message.

BASIC-, ECONOMY - and STANDARD Telephones

To send messages

Messages can only be sent in the call or conversation (speech) state.

The above telephone types can be used to send "Call- back" or voice messages.

Voice messages require the VMU-D / -HD board.

"Call-back" messages

- Dial number of relevant extension
- Press **Message**.
  Lamp flashes to confirm connection.
  Lamp for used traffic function extinguishes.
- Press #. Verification tone is heard.
  Message-lamp extinguishes when handset is replaced.
  The message has been sent.

Voice messages.

- Dial number of relevant extension
- Press **Message** whose lamp flashes to confirm connection.
  Lamp for connected traffic function extinguishes
- Press **9** to start recording
- Record message.

To play back recorded message

- Press ***** to play back recording.

To rerecord the message

If one wishes to rerecord a message after playback:

- Press **9** once more.

To register the recording

- Press # to register recording.
  Verification tone is heard.
  Message-lamp extinguishes when handset is replaced.
  Message has been sent.

To terminate without completing the recording

To terminate without completing the recording:

- Press **On/Off**- or **Clear**-key.

To answer messages

Incoming messages are indicated at the address position by a rapidly flashing message lamp.

The message is answered as follows:

- Press **Message**-key.
- Enter Password (=authorisation code), if required.

  If message is "Call- back" message, the caller will be rung automatically and the call becomes a normal internal call.

  If the message is a voice message this can be listened to via the handset or monitoring loudspeaker.
  The message is repeated twice after which a termination message is supplied.

The user can terminate the playback at any time by pressing the **Clear**-key.

Analogue Telephone

To initiate a message

Also extension users with analogue telephones can send "Call-back" messages or voice messages to other extensions.

A "Call-back" message is initiated as follows:

- Press **R**-button
- Press **9** and #
- Replace handset

A voice message is initiated as follows:

- Press **R**-button
  Press **9** twice
- Record message
- Press #

Messages can only be initiated during ringing before answer.

To "answer" a message

A message is indicated by the address receiving special dial tone when the user lifts the handset.

An extension user with analogue telephone can answer messages by dialling the code ***59#** and entering a password (=authorisation code), if programmed..

A stored "Call-back" message will then automatically call the extension that initiated the message.

A stored voice message is played back automatically.

Capacity

There is no limit in the number of messages that an extension can send or receive.

The total number of messages in the system can amount to a maximum of 1000, of which a maximum of 48 can be text messages.

The number of messages that can be stored for later retrieval and checking in the system is programmable but a maximum of 99 per message type can be stored.

The number of voice messages is also limited by available capacity on the VMU-D / -HD boards.

Limitations

Text messages can only be exchanged between extensions equipped with EXECUTIVE Telephones or OPERATOR Consoles.

Voice messages require the VMU-D / -HD board.

Messages from idle state can only be sent from EXECUTIVE Telephones or OPERATOR Consoles.

Stored messages are protected in the event of power failure.

Unanswered messages recall the extension that initiated the call automatically.

However the time for the erase command must be set longer than the command for recall.

On system start erasure takes place at 00:00 hours, 24 hours after the message was sent.

Programming

Categorisation

0101
Facility category (COS) for message handling

Each extension is assigned a facility category (class of service) that has the desired message functions:

```
10 Jul 14:40   +15°
FACILITY COS          0101 xxxx       zz
 backward  forward     c/i      return
```

xxxx	Enter extension's directory number
zz	Enter relevant facility category (0 - 15)

To program the list of facility categories

A number of functions for message sending are determined by the extension's facility category.

For programming of the facility category list, see CATEGORISATION, document 149/155 34-ASB 150 02 Uen..

The following functions are affected:

3014
Send message from others?

Default data = N.

3015
Send voice message?

Default data = Y.

3016
Send text message?

Default data = Y.

3017
Send "call-back" message?

Default data = Y.

3066
Return messages?

Default data = N.

3067
Control messages for others?

Default data = N.

0106
Prevent reception of messages

An extension that does not want to receive messages can be programmed for this.

```
10 Jul 14:40   +15°
CALL BACK ALLOWED ?   0106 xxxx        z
 backward  forward     c/i      return
```

xxxx — Enter extension's directory number

z — Enter relevant function.
Y = call-back busy and message is accepted
N = Call back and message is not accepted
Default data = Y

0160
Password check retrieving messages internally ?

To avoid an unauthorized internal retrieving of messages, a password check (=authorisation code) can be programmed.

```
 10 Jul 14:40   +15°
PASSW.CHECK INT?  C   0160     xxxx        z
  backward    forward      c/i       return
```

xxxx — Enter extension's directory number

z — Enter relevant function.
Y = Check password for internal retrieving of messages.
N = Skip password check for internal retrieving of messages. (Default data)

NOTE: Before programming this command, you have to check command 0117 to be activated !

Time restrictions

4301
Maximum time for voice messages

The voice messages are not time-restricted.

It is possible to program a maximum time.

```
10 Jul 14:40   +15°
MAX TIME SPCH MESS    4301           zzz
 backward  forward     c/i      return
```

zzz — Enter number of seconds (0 - 255).
Default value 12 seconds

4304
Storage time for messages

A message will normally be stored for at least 24 hours.

A longer storage time can be programmed, if so required.

```
10 Jul 14:40   +15°
TIME TO KEEP MESS    4304            zz
 backward  forward     c/i      return
```

zz — Enter number of 24 hours periods (1 - 99).
Default value = 1

4308
Number of days a message may remain unanswered before it is returned

Here the number of days is stated that a message may remain unanswered before it is returned to sender.

NOTE: The number of days in command 4304 must be > the number of days stated in command 4308 for messages to be returned.

```
10 Jul 14:40   +15°
TIME OF RETURN MESS   4308          zz
 backward  forward     c/i      return
```

zz Enter relevant number of days (0 - 99).
Default data = 1
If 0 is entered, the call is returned at midnight the same day

4309 - 4311
Number of messages to be stored

For each type of message it can be stated how many answered messages are to be saved for future reading.

Each stored message decreases the space for unanswered messages to the same extent.

Default data = 0 means that a message will be erased automatically when it is answered.

```
10 Jul 14:40   +15°
KEEP ANSWERED CALLME  4309          zz
 backward  forward     c/i      return
```

zz Enter number of call-back messages to be stored (0 - 99).
Default data = 0

```
10 Jul 14:40   +15°
KEEP ANSWERED VOICE   4310          zz
 backward  forward     c/i      return
```

zz Enter number of voice messages to be stored (0 - 99).
Default data = 0

```
10 Jul 14:40   +15°
KEEP ANSWERED TEXT    4311          zz
 backward  forward     c/i      return
```

zz Enter number of text messages to be stored (0 - 99).
Default data = 0

Functions for VMU-D / -HD boards

4305
Alter speech quality of voice messages

Voice messages can be stored with a lower quality to thereby increase the storage time.

```
10 Jul 14:40   +15˚
HIGH MESS QUALITY     4305             z
 backward  forward     c/i      return
```

z — Enter relevant function.
Y = High speech quality.
N = Normal speech quality (default data)

4601
Prevent voice messages on VMU-D / -HD boards

It is possible to prevent messages from being stored on defined voice memory boards.

```
10 Jul 14:40   +15˚
REC MESS ALLOWED?     4601 uuvv        z
 backward  forward     c/i      return
```

uuvv — Enter board position of relevant VMU-D / -HD board (01 - 63) and 00

z — Enter relevant function.
Y = Board may be used for voice messages (default value).
N = Board may not be used for voice messages

Equipment

To use voice messaging, VMU-D / -HD board(s) must be installed.

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
SEA/EBBMP T.Preissner	SEA/EBBX/E	343/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved / Kontr/Checked		Datum/Date / Rev	Tillhör/Referens-File/Reference
SEA/EBBMP		99-07-15 / E	ASB 150 02
		Database reference	
		343.fm	

MUSIC-ON-HOLD

Definition

External or internal subscribers waiting in park (camp-on) state will receive music or other recorded information either during the transfer procedure only, or until the speech connection between them is established.

Use

Music-on-hold supplies the parked caller with park state indications (music or other recorded information) which is more pleasant than silence.

Music-on-hold is an important ingredient of ACD-, Operator- and Answering/Reroute position's queue handling.

The music source can be a tape recorder that is connected to a free analogue trunk (BTU-A) or the audio input on the CPU-D_ board. Furthermore, it is possible to use VMU-HD or MFU board as music source for music-on-hold

Operation

Callers transfered to an Answering/Reroute position's -, ACD-, or Operator queue will receive music-on- hold during transfer. Then they **may** receive first a voice message of the corresponding queue and then Music-on-hold until speech connection is established (depends on how the feature has been programmed; see "Voice message before answering").

If the Answering/Reroute position is an Automated Attendant, the call rerouted to this position will receive music-on-hold until the Automated Attendant answers the call.

Capacity

One music channel can be programmed for music-on-hold. A music channel created for music-on-hold can also be utilised for background music.

On the VMU-HD/MFU 16 different voice announcments (music titles) can be stored, one of these can be programmed to source the music channel.

Limitations

Music is supplied in general to all external or internal callers, subject to common or individual parking, until speech connection occurs or the originator goes on-hook.

A defined music channel for music-on-hold will permanentely occupy one PCM channel in the system.

A defined music channel for music-on-hold on the VMU-HD/MFU will permanentely occupy one voice channel. A recorded music announcement on VMU-HD/MFU board can have a maximum length of 255 seconds.

Programming

Note:

For ASB 150 02 systems up to R10:

To activate the programming the system has to be restarted !

For ASB 150 02 systems starting from R10:

Restart of system is not necessary anymore.

0161
Music on hold

This command allows you to specify whether a system's extension is to be connected to the silent channel or to the music channel while being in the parked state.

EXECUTIVE Telephone

```
10 Jul 14:40   +15°
MUSIC IN HOLD STATE?     0161    xxxx     z
backward      forward      c/i       return
```

xxxx enter extension's directory number

z defines whether or not the specified extension will be connected to music-on hold, while being in the parked status.

Valid data: Yes/No

Y (Yes) = Connected to music-on-hold channel
N (no) = Connected to silence channel

Default data: Yes

The following commands are only accessable via RASC:

5403
Create music-on-hold

In order to obtain a music channel, it has to be created.

5503
Delete music-on-hold

5610
Alter music-on-hold

3601
Music source directory number

The command is used to define the interface of the external connected/integrated music source.

An external music source can be either connected via the CPU-D_ board (D#00) or via the analogue trunk line.

For programming the integrated music source (16 different announcements) the valid announcement number is required, which in this case ranges between D420 and D42F.

Valid data:

D#00	CPU-D_
xxxx	Dir number of the trunk line
D420	Voice Prompt 0
D421	Voice Prompt 1
D422	Voice Prompt 2
D423	Voice Prompt 3
D424	Voice Prompt 4
D425	Voice Prompt 5
D426	Voice Prompt 6
D427	Voice Prompt 7
D428	Voice Prompt 8
D429	Voice Prompt 9
D42A	Voice Prompt 10
D42B	Voice Prompt 11
D42C	Voice Prompt 12
D42D	Voice Prompt 13
D42E	Voice Prompt 14
D42F	Voice Prompt 15

Default data: ----

2039
Keep music on hold

This command defines whether music-on-hold is to be supplied until the speech connection is established, or music on hold is to be supplied only during the transfer procedure and then the ringing tone will be sent to the caller.

Valid data: Yes/No

Yes=until speech connection
No= only during transfer

Default data: No

The following commands are only relevant, if the music source is connected to a BTU-A board:

1201
Line signal scheme

Enter value STANDARD (=1)

1302
Outgoing digit transmission

This command indicates how the digits are sent out from the interworking exchange. The initial value depends on the type of the BTU-A.

Enter value NO TRANSMISSION (=3)

1307
PTS-signal from PE ?

This command is used to state whether the exchange is to wait for a proceed-to-send signal (PTS-signal) from the parent exchange.

Enter value = NO

The following commands are only relevant, if the VMU-HD/MFU is used as music source:

The following command is only accessable from System Telephones:

4427
Recording music announcements

The command is used to record the music announcements for the music-on-hold function

EXECUTIVE Telephone

```
10 Jul 14:40   +15°
MOH PROMPTS 0-15     4427            x
backward      forward      c/i       return
```

x enter the desired voice prompt number

Valid data: 0-15

Press ENTER to accept and to go to the desired voice prompt.

Modify the specified voice prompt by pressing one of the function keys.

```
 10 Jul 14:40   +15°
MUSIC ON HOLD VOICE PROMPT NUMBER:     x
 record    play-back      erase      return
```

F1	To record the voice prompt
F2	To listen to the stored voice prompt
F3	To erase the stored voice prompt
F4	To return to the previous level.

The following commands are general VMU-HD/ MFU commands valid for all voice features and should therefor also be consired for the music-on-hold functionality:

4303
Length of voice announcements

This command is used to determine the maximum length of a recorded voice announcements.

```
10 Jul 14:40   +15°
MAX TIME SPCH ANNO    4303           zzz
```

zzz	Enter required time
Valid data:	0 - 255 seconds,
Default data:	59

4307
High announcement quality ?

Voice announcements can be stored with a lower voice quality so that the storage time is increased.

```
10 Jul 14:40   +15°
HIGH ANNO QUALITY?      4307            z
 backward    forward                return
```

z Enter relevant function.

Valid data: Yes/No
Y (Yes) = High speech quality.
N (No) = Normal speech quality

Default data: No

4603
Voice announcements on VMU

It is possible to determine whether a certain VMU board may be used for voice announcents or not.

```
10 Jul 14:40   +15°
REC ANNO ALLOWED ?    4603 xxyy        z
 backward  forward     c/i      return
```

xxyy Enter board position (01 - 63) and 00

z Enter relevant function:

Valid data: Yes/No

Y (Yes) = Voice answer may be stored on board
N (No) = Voice answer may not be stored on board.

Equipment

External music source:
For the music-on-hold feature it is required that the system is equipped with an external music source (CD-player,Tape-recorder, etc.) which is connected to the audio input on the CPU-D_ board or to a free analogue trunk on the BTU-A.

Integrated music source:
In case of using the integrated music-on-hold function, it is necessary to have the system equipped with either a VMU-HD or a MFU board.

FECU

The integrated music-on-hold function on VMU-HD/MFU is protected by the FECU which is connected to the CPU-D4. Without FECU a parking tone is faded in and a FECU warning is generated.

For detailed description see Facility Description - General, document 155 34-ASB 150 02 Uen.

NAME SELECTION

Definition

Name selection means that a call can be initiated by pressing a designated key.

Name selection is the basic function for all programmable keys.

Each name selection key can be programmed for a directory number with 4 digits.

Postdialling means that a digit corresponding to a postdialling facility can be stored on a key.

Use

Name selection is used to obtain, via a single key depression, the following functions:

- Internal access of other extensions or facilities that are called via directory numbers
- External call subscribers who can be accessed via a common abbreviated number
- Postdialling is used to initiate facilities that can be activated via postdialling

Operation

ECONOMYplus -, STANDARD - and EXECUTIVE Telephones

Name selection

- Press relevant name selection key.
  One of traffic functions **Line 1**, **Line 2** or **Inquiry** is seized and its lamp flashes to confirm connection
- Number stored at this name selection key is now sent via seized traffic function

If the user is connected to another traffic function, for example **Line 1** or trunk, when a name selection key is pressed, this traffic function will be parked individually and automatically. **Line 2** or **Inquiry** will be seized and the stored number is transmitted via the selected traffic function.

When a stored number has been transmitted, the call is to be regarded as a normal call.

Postdialling

- Press programmed key.
  Stored digit is sent via connected traffic function

If no traffic function has been seized, the key depression will be ignored.

Capacity

The number of name selection keys is limited by the number of programmable keys:

• BASIC	DBC 210	= 3
• ECONOMYplus	DBC 211	= 4
• STANDARD	DBC 212	= 4
• EXECUTIVE	DBC 213	=14
• OPERATOR	DBC 214	= 3
• KEY PANEL		=17
Old telephones:		
• BASIC	DBC 199	= 0
• ECONOMY	DBC 601	= 0
• ECONOMY	DBC 751	= 0
• STANDARD	DBC 631	=10
• STANDARD	DBC 755	=10
• EXECUTIVE	DBC 662	=30
• EXECUTIVE	DBC 753	=30
• OPERATOR	DBC 663	=20
• OPERATOR	DBC 754	=20

Each name selection key can consist of a maximum of four characters comprising (**1**-**9**, **0**, *****, #).

Limitations

- When the system is initiated, the programmable keys of all telephones possess name selection function.
- If name selection is to be utilised for postdialling facilities such as automatic callback or camp on, it will be necessary to redefine the function.
- A call initiated via name selection seizes one of traffic functions **Line 1**, **Line 2** or **Inquiry** for which reason at least one of these traffic functions must be free.
- Calls initiated via name selection are subjected to analysis by both TCD (Trunk Call Discrimination) and traffic group matrix.

  Exception: If stored number is a common abbreviated number, no TCD will be undertaken

Programming

Programming is possible via system programming or individual programming.

System programming

0301
Function of key

Redefinition of programmable key for postdialling

```
10 Jul  14:40  +15°
FUNCTION OF KEY       0301 xxxx yy    zz
  backward  forward     c/i      return
```

xxxx	Enter extension's directory number
yy	Enter relevant key (00 - 48)
zz	Enter relevant function: Name selection = 10 Postdialling = 11

Step to command 0302.

0302
Associated number

```
10 Jul 14:40   +15°
ASSOCIATED NUMBER     0302 xxxx yy  zzzz
 backward  forward     c/i      return
```

zzzz	Enter relevant directory number

Individual programming

For individual programming,
see document FACILITY DESCRIPTION - GENERAL
(155 34-ASB 150 02 Uen).

Equipment

System telephone.

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr		
SEA/EBBMP T.Preissner	SEA/EBBA	363/155 34-ASB 150 02 Uen		
Dokansv/Godkänd - Doc respons/Approved	Kontr/Checked	Datum/Date	Rev	Tillhör/Referens-File/Reference
SEA/EBBMP		99-02-17	A	ASB 150 02
		Database reference		
		363.fm		

NATIONAL SPECIFIC FUNCTIONS

Contents **Page**

SPAIN - IBERCOM INDICATOR 2
CROATIA - ADAPTATION OF THE CN NUMBERING PLAN 4
POLAND - TEST CALL 8

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
		363/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved	Kontr/Checked	Datum/Date	Rev / Tillhör/Referens-File/Reference
		99-02-17	A

SPAIN - IBERCOM INDICATOR

Definition

The IBERCOM user services are special public network functions which will be provided by TELEFONICA to subscribed customers in Spain.

The IBERCOM user services are comparable to VPN (Virtual Private Network) functions provided by the public network.

The IBERCOM indicator is a special information element in the call-setup message of outgoing calls on an ISDN interface in Spain and indicates to the public network that the calling party is an IBERCOM service subscriber and that the call shall be handled as an IBERCOM network call.

Use

The IBERCOM indicator function was developed for Spain, and is only available in the related specific national ISDN protocol.

The function is only available to customers having subscribed to the IBERCOM service, and makes possible to access the provided services such as special call tariffs.

Operation

For the end user the external call handling or the CN call handling via the IBERCOM network, is the same as the call handling via the ordinary public network.

From the ISDN protocol's point of view there is a difference in the form of the national specific IBERCOM indicator. The indicator contains the following parameters.

- call class
- charging type

The values of the parameters depends on the programming.

Call class

This parameter defines whether the call is handled as an interuser or an intrauser IBERCOM call.

- Interuser call
  An external call terminated ouside the IBERCOM network or a call within the IBERCOM network whereby the called and calling parties are belonging to different (CN) companies.

- Intrauser call
  An external call within the IBERCOM network whereby called and calling parties are belonging to the same (CN) company or organisation.

Charging type

This parameter defines whether individual or group charging shall be performed for the call.

- Individual charging
  The call will be charged to the individual extension.
- group charging
  The call will be charged at system (PBX) level.

Capacity

not applicable

Limitations

The IBERCOM indicator can only be used in conjunction with the ISDN protocol for Spain.

Programming

0150
Individual charging

This command states how an extension should be charged for an outgoing call. Information about the charging method and the extension number is sent to the public exchange, if applicable.

The public exchange determines whether common or individual charging is applied for the call.

Value:	No	Common charging
	Yes	Individual charging
Default:	No	Common charging

The following commands are only accessible via RASC:

1911
Network according to:

This command specifies the signalling protocol for the desired ISDN link

Value relevant to the IBERCOM indicator: Spain

Default: ETSI

9104
Call Class

This command defines for each CN destination whether or not the call is handled as an IBERCOM call or as "interuser" or "intrauser" call.
In case of outgoing CN calls, the Private Network Router (PNR) has always the priority and overwrites the trunk setting of command 1036.

This command is only activated if the value of command 1911 is set to "Spain"

Values:	Not specified
	Interuser IBERCOM network connection
	Intrauser IBERCOM network connection
Default:	Not specified

1036
IBERCOM network connection

This command defines whether or not the trunk is connected to an IBERCOM network, furthermore it also defines whether outgoing calls are handled as "interuser" or "intrauser" calls.

This command is only activated if the value of command 1911 is set to "Spain"

Values:	0	Not specified
	1	Interuser IBERCOM network connection
	3	Intrauser IBERCOM network connection
Default:	0	Not specified

Equipment

The following trunk boards are supporting the IBERCOM functionality: BTU-D with ISDN Prom set, BTU-B, MFU

If the IBERCOM indicator is used in conjunction with CN calls (command 9104), the connected FECU on the CPU-D4 must have one of the following Indexes: / 2, /3, /4, /5, /7, /8, /9, /10.
see also document 15534-Facility description general

CROATIA - ADAPTATION OF THE CN NUMBERING PLAN

Definition

This feature increases the numbering plan functionality for Corporate Networks by using virtual 5-8 digit numbers for the internal ASB 150 02 numbering structure.

Use

The feature was designed for the Corporate Network (CN) of the Ministary of the Interior of the Rebublic of Croatia, on condition that all systems of the CN support a 5 digit internal numbering plan.

The feature can also be used in other CN networks where it is required to support in the local PBXs an internal numbering structure of up to eight digits . However we recommend to consider the limitations of the feature (see separate chapter) before offering this solution to the customer, because this is a solution with a virtual numbering plan, and most of the internal functionalities can not be applied to virtual numbers.

Operation

To handle the virtual numbers in the system, a number translation of the sent calling/connected CN number as well as of the received CN number is necessary.

The number translation for outgoing calls is done by using the 4 digit internal directory number, commands 2073 and 2074 for removing and prefixing digits, respectively a common abbreviated number for the number conversion at incoming calls terminated within the own system.

Outgoing CN calls

The composition of the virtual directory number being sent out to the CN is done in the following way:
Up to 3 digits of the internal directory number can be removed (command 2073) and prefixed with up to four digits of the Local Private Code (LPC, command 2074).

(LOC)+LPC+"edited directory number"

LOC: is the own Location Code which is sent to the CN in case of number types "unknown" and "regional level 1"

LPC: is a non diallable number in the system, it is only used for prefixing

Example:

Virtual number plan of the PBX:	54000-54999
Internal directory number plan:	1000 - 1999
Local Private Code:	54

Number presentation at RL0

Directory number:	1234
Digits to be removed:	1
"Edited directory number":	234
Local Private Code:	54
Virtual number: (presented CN number)	54234

Number presentation at RL1

Directory number:	1234
Digits to be removed:	1
"Edited directory number":	234
Local Private Code:	54
Location Code:	876
Virtual number: (presented CN number)	87654234

Incoming CN call

In case of incoming calls, the LPC has to be removed and replaced by digits, available in the internal directory number plan. The replacement is done by using a programmed common abbreviated number which must be equal to the LPC. The number assigned to the common abbreviated number contains the leading digits of the internal directory number which will be combined with the remaining digits of the incoming call.

Example: (same as above for outgoing calls)

virtual number plan of the PBX:	54000-54999
Internal directory number plan:	1000 - 1999
Abbreviated number:	54
with assigned number	1
Number presentation at RL0	
Called CN number	54234
Abbreviated number converts the leading digits to a digit available in the internal number plan	54 1
remaining digits of the dialled no.	234
Directory number	1234
Number presentation at RL1	
Called CN number	87654234
LOC is detected and removed:	876
Abbreviated number converts the leading digits to a digit available in the internal number plan	54 1
remaining digits of the dialled no.	234
Directory number	1234

Capacity

not applicable

Limitations

The implementation of the virtual numbering plan relies on a composition of the internal 4 digit directory number plan and the LPC, in order to simulate an up to 8 digit numbering plan for the CN.

The virtual numbering plan can be used for the internal basic call handling (common abbreviated number handles the number conversion also internally), but not for the execution/programming of most of the internal features, such as:

- Abbreviated number dialling common numbers
- Bypass Call diversion and follow me
- Call information logging
- Call metering
- Call pick up common
- Call pick up extension group
- DISA
- Diversion (direct/busy/on no reply)
- Display of the own virtual number
- Display of the called/calling virtual number in case of internal calls
- Follow me
- Group (PBX) hunting
- Hotline
- Hotel guest room telephone
- Intercom
- Key system function
- Loudspeaker paging
- Mailbox system common
- Mailbox system individual
- Message system voice
- Message system call me
- Message system text
- Name selection
- Secretary function
- Supervision
- Telephone directory

In order to use the features listed above, the internal 4 digit numbering plan has to be used. This situation might confuse some users, because they have different directory numbers for internal and CN call handling.

The total number length of the LOC and the virtual directory number within the Corporate Network must not exceed 8 digits.

Programming

The following commands are only accessible via RASC:

Composition of virtual numbers (calling/connected number) presented to the CN network for outgoing calls

2073
Removed digits for composing A or B number

This command is used in conjuntion with the command 2074 to compose a virtual directory number for the CN number presentation, especially used for CNs where a local directory number plan of more than 4 digits is required.

Composition principle: removing of digits from the internal directory number and prefixing the edited digits with the Local private code.

The command 2073 defines the amount of leading digits, which are removed from the internal directory number

Values: 0-3 digits

Default: 0

2074
Local private code for composing A or B number

This command is used in conjuntion with the command 2073 to compose a virtual directory number for the CN number presentation, especially used for CNs where a local directory number plan of more than 4 digits is required.

Composition principle: removing of digits from the internal directory number and prefixing the edited digits with the Local private code.

This command defines the Local Private Code (LPC), which is used to prefix the edited directory number .

Values: 1-9999

Default: --

Conversion of the virtual numbers received from CN to the internal directory number plan.

5413
Create abbreviated number series

This command is normaly used to create a common abbreviated number series, in this specific case the command will be used to create a single number, which must be equal to the Local Private Code.

2501
Translated number

Each common abbreviated number is programmed in an abbreviated number table and has an individual assigned number to it.

This command is normaly used to define the external numbers behind the common abbreviated numbers. For the virtual number conversion this command is used to define the digits which were removed by command 2073 (see previous examples).

2502 - 2505
Categorisation

For each abbreviated number it can be stated for which abbreviated number category (0 - 3) it shall be available.

0105
Abbreviated number category for extension

Each extension can be assigned an abbreviated number category.

In order to use the virtual numbers also internally for basic call handling, the extensions must always be assigned to the category which enables the common abbreviated number used for the number conversion to internal directory numbers.

2801
Short Number open for tenant

Command 2801 specifies for which tenant groups the chosen common abbreviated number series is open/ closed.

1005
Abbreviated number category for trunks

Each trunk can be assigned a abbreviated number category.

In order to use the virtual numbers for the incoming calls, the trunk line must always be assigned to the category which enables the common abbreviated number used for the number conversion to internal directory numbers.

Equipment

BTU-D with ISDN Prom set, BTU-B or MFU

To access CN functions in ASB150 02, the connected FECU on the CPU-D4 must have one of the following indexes: /2, /3, /4, /5, /7, /8, /9, /10. (see also document 15534-Facility description general)

POLAND - TEST CALL

Definition / Use

This feature is used for test call handling by the Polish PSTN to check the speech (B-) channels of external lines.
The primary usage is in conjunction with CAS trunks but it is also possible to be used for other types of trunks.

Operation

The test call is initiated by the PSTN by direct dialling in, either decadic or MFC. The dialled digits are related to a specific ‘extension number’ which in turn starts the test call sequence.

The test sequence is predefined:

- Ring tone is sent during predefined time (approx. 8 sec.) and then speech connection is established to PSTN.
- Test tone with predefined frequency (800 Hz) and cadencies is sent to the PSTN (3 cycles of 2,5 sec. on and 2,5 sec. off at a level of -6 dBm0).
- The connection is released by ASB 150 02.

Capacity / Limitations

This test can be used in all automatic incoming call cases. Used register signalling can be e.g. decadic, DTMF and MFC. Related trunks can be analogue, CAS and ISDN.
One 1 - 4 digit test call number is available (see comand 5414).

Programming

The following commands are only accessable via RASC:

2649
Test tone

The test tone is used for external line testing purposes to check the condition of speech (B-) channels.
For Polish test call handling following values have to be entered:

Tone Elem.no.	Tone Frag. Int.	Tone Frag. Ext.	Signal Time (ms)	Pause Time (ms)
1	8	8	2500	2500
2	8	8	2500	2500
3	8	8	2500	2500
4	-	-	0	0

2601
Tone fragment definition

This command defines the tone fragments for the test tone for command 2649. The predefined default values for the Test Call Poland are: 800 Hz and -6dBm0.

5414
Create test call numbers

This test call number which is expected to be received from the PSTN Poland is created by this command in line "Test call number for Poland".

5514
Delete test call numbers

The test call number is deleted by this command in line "Test call number for Poland".

5622
Alter test call numbers

The test call number is altered by this command in line "Test call number for Poland".

Equipment

A BTU-D card with CAS prom set is necessary to perform the test.

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
SEA/EBBMP T.Preissner	SEA/EBBX/E	361/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved	Kontr/Checked	Datum/Date / Rev	Tillhör/Referens-File/Reference
SEA/EBBMP		99-07-15 / F	ASB 150 02
		Database reference	
		361.fm	

NETWORKING BASED ON ANALOGUE TIELINES

Definition

"TIE LINE“ denotes a permanent connection between two ASB 150 02 exchanges or between an ASB 150 02 exchange and another PBX via leased analogue lines.

Use

Network configurations

Tie lines are used for private network configurations consisting of two or more exchanges.

Other applications

The printed board assemblies can be used for two other applications as well.
The BTU-E provides connection of paging equipment.
The BTU-C offers the hardware for certain types of direct in-dialling from the public network.

Operation

The operation differs depending on the network configuration of the called tie line.

Operation in networks with open number plan (variable number length)

Dialling the route access number provides access to the exchanges of the network. Append the desired extension number.

Operation in networks with coordinated number plan (fixed number length)

Dial the desired extension number. The extension number is always the same, irrespective of your actual location in the network.

NETWORK CONFIGURATIONS

A network shows the following characteristics:

- Number of routes
- Type of number plan
- Traffic options

Number of routes

Two or more exchanges may be interconnected by tie lines in one network. Each connected exchange is addressed by dialling the related route access number.

ASB 150 02 offers up to 255 routes. One tie line can be a member of several routes

Type of number plan

ASB 150 02 has a fully flexible one to four digit number plan (0–9999). The numbers within a network can be organised as open number plan (variable length number plan) or as coordinated number plan (fixed length number plan).

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
		361/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved	Kontr/Checked	Datum/Date	Rev / Tillhör/Referens-File/Reference
		99-07-15	F

Open number plan (variable number length)

Each outgoing tie line route is assigned to a ROUTE ACCESS NUMBER. This number is used for the selection of the desired exchange of the private network.

After dialling the ROUTE ACCESS NUMBER you may dial the directory number of an extension or the route access number to aNother exchange.

Coordinated number plan (fixed number length)

All interconnected exchanges in the private network share a common numbering plan. Each exchange uses a unique first digit in its numbering plan. This first digit determines the exchange that is called.

ASB 150 02 either calls an extension within the actual exchange or forwards the call to aNother exchange. The extension is called if the leading digits belong to the exchange that has received the number. If the first digit belongs to aNother exchange, ASB 150 02 forwards the call to the correspondent route. The called exchange receives the dialled number – including the first digit (pre-digit) – for further analysis.

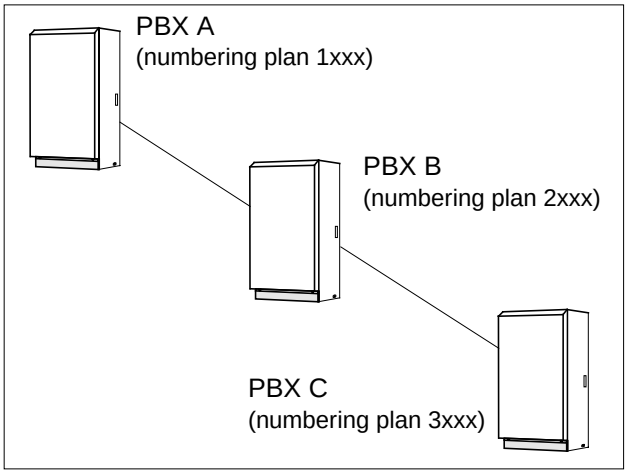
All routes and pre-digits have to be programmed for each exchange within the network, even if the routes use the same physical tie lines.

Example:

Three exchanges are connected via tie lines using a coordinated number plan. The exchange named "PBX C", has "3" as first digit in its numbering plan.

An extension within PBX A dials the digits 3XXX. The exchange selects one of the free lines in route 3 and transmits the pre-digit 3 followed by the remaining digits to PBX B (the exchange connected to route 3).

PBX B analyses the received digits (3XXX) to forward the call to PBX C.



TRAFFIC OPTIONS

Outgoing traffic

Outgoing traffic can be automatic or manually transferred via the operator
(for more informations, see OPERATOR, document 380/155 34-ASB 150 02 Uen).

Automatic traffic
By dialling the appropriate directory number (ROUTE ACCESS NUMBER) one free individual in the route to the inter-working exchange is selected. The exchange then sends the called directory number to the inter-working exchange.

Manual traffic
In the event that the route has a limited number of lines or if it is a matter of a distant and expensive connection, it may be desirable to allow the operator to control traffic.
The extension then calls the operator who either transfers the line with dial tone or calls B-extension and then transfers the call.

Alternative routing
Alternative routing offers two alternative choices per route when the desired route is busy. ASB 150 02 adds up to ten digits before the original dialled number to access the alternative route.
Alternative routing via the public network is particularly beneficial if the public network offers the DIRECT-IN-DIALLING (DID) facility.

Incoming Traffic

Incoming traffic can be automatic or manually transferred via the operator.

Automatic traffic
When ASB 150 02 detects an incoming call, a PTS (Proceed To Send) signal is sent to the calling exchange.

The calling exchange then sends the directory number that is analysed by the called exchange.

The exchange accepts directory numbers for

- an extension
- an operator
- a PBX- (extension-) group
- an ACD-group
- a fictive number
- an outgoing line (transit traffic, see below)
- another facility related to the desired directory number

Adaptation of number length
The incoming (called number) can be too long or too short for matching with the internal number plan.

ASB 150 02 can add or omit pre-digits to prepare the received number for number analysis.

- Discard one to three digits before number analysis.
- Add one or two digits to the received number before it is analysed.

Manual traffic
In case of manual traffic the incoming line will always be routed to an answering position, for example an operator. The answering position can transfer the call to the desired extension.

Camp-on
The incoming line can be programmed for automatic camp-on to busy extensions. In this case, the caller will receive the ring control tone until the desired busy extension answers.

Reroute to answering position

An answering position can be defined for each incoming tie line. ASB 150 02 routes incoming calls to this answering position in the following cases:

- Called extension is busy
- Called extension does not answer
- Incomplete number received
- Calls to the desired extension are not permitted
- Called extension is blocked
- Received number is unassigned (vacant).

Transit traffic

An incoming tie line or exchange line can be connected to an outgoing tie line or exchange line.

Some prerequisites have to be fulfilled for transit traffic:

- The TRAFFIC GROUP MATRIX has to permit transit traffic.
- The required transmission parameters and local PTT rules have to be fulfilled for transit traffic.

Private trunk line and abbreviated numbers

The tie line can be represented on a key utilised as PRIVATE TRUNK LINE.

Extensions can use abbreviated numbers for direct calls to extensions in interworking exchanges.

Night service

Tie lines can be night-switched to a pre-programmed directory number.
Programming of the tie lines in a separate night service group enables them to be night-switched individually.
The night service position has to be an extension number in the same exchange (except for external diversion to external targets defined as abbreviated number).

SIGNALLING PREREQUISITES

Type of line signalling

Signalling provided with the BTU-C

e.g.: Loop signalling

Signalling provided with the BTU-E

- E&M signalling
  - Swedish E&M
  - Continuous E&M, A-format
  - Continuous E&M, D-format
  - Discontinuous E&M
  - American E&M
  - Paging E&M signalling according to ESPA for connection of paging equipment
- Tone signalling according CEPT L1 or SSAC 15 A

The individual signal diagrams can be adapted for several signal prerequisites. See RASC, command group 17 for more information.

Type of register signalling

- Decadic dialling
- DTMF (Dual Tone Multi Frequency)
- MFC and MFE

OTHER APPLICATIONS

Interface for paging equipment

The BTU-E allows connection of paging equipment with signalling according to ESPA standards (2-wire speech connection including signalling for "paging in progress“ and "paging equipment not present“). This allows display and tone information for the calling user.

For more information see PAGING, document 400/155 34-ASB 150 02 Uen.

Direct in-dialling

The printed board assembly BTU-C offers the HW platform for certain types of DIRECT IN-DIALLING (DID) from the public network.

More information see DIRECT IN-DIALLING, document 162/155 34-ASB 150 02 Uen.

Capacity

Number of tie lines

The maximum number of trunk lines and tie lines in ASB 150 02 is 60.

Number of routes

One ASB 150 02 exchange supports up to 250 routes.

Limitations

There are no limitations for analogue tie lines, compared with analogue trunk lines.

The following features are Not supported by analogue tie lines (via BTU-E and BTU-C).

- Diversion, follow-me and re-route to extensions in inter-working exchanges is not supported. (External diversion to parties defined in abbreviated numbers is possible.)
- The A-number and the B-number are not transmitted via analogue tie lines.
- The operator receives no other information on the display than called or calling line number when forwarding calls from interworking exchanges.
- Sending messages to extensions in interworking exchanges is not possible.
- An extension calling from another exchange can receive VOICE INFORMATION only.

- Members of groups, within the PBX, must belong to the same exchange.
  Examples of such groups are:
  - PBX-groups
  - Fictive number
  - ACD-groups
  - Answer groups
- Intercom cannot be used for connections between extensions in two different exchanges.
- Supervision of directory numbers belonging to other exchanges is not possible.
- Call-back from extensions situated in another exchange is not possible.
- However, call-back on individual tie lines or tie-line routes is possible.
- Call metering information is nNot received from analogue tie lines.
- Intrusion to extensions in other exchanges is not possible.
- The call status (free, free on line 2, busy…) is not displayed on the telephone when calling an extension in another exchange (see exception for MFC and MFE signalling).

Exception for MFC or MFE signalling

MFC and MFE signalling supports call-status display information for the following cases:

- free
- busy
- congestion
- blocked
- number unavailable

Programming

Each tie line can be programmed for adaptation to another PBX. Adaptation of line signalling and system times requires familiarity with ASB 150 and the relevant signal diagram.

The descriptions of commands provided below are concise and provide a handling program for tie line programming.

Order for programming external line data

The recommended order for programming external line (trunk) data is provided below.

Program one route at a time. Program one line in the route and copy its data to other lines in the route. Then repeat the procedure for the other routes.

Route selection

5401
Create a new route

In ASB 150 a route is a list of trunk lines. When calling the route's directory number, a free trunk will be seized in accordance with a defined allocation principle.

This command will create a new route with the stated directory number. The route may be given a random directory number, if there is one that does Not conflict with existing directory numbers. (See command group 56). ASB 150 allows a maximum of 250 routes.

3301
Line selection principle

This command defines the selection principle to be used for a route.

Valid data: Yes/No

Yes	sequential selection with alternating start point. Search for a free trunk starts with the position number following that of the latest seized trunk.
No	equential selection from first trunk. Search for a free trunk always starts at the first trunk in the route.

3201
Route members directory number

This command states which trunks are to belong to a route as well as the position of the trunk within the route.
A trunk is removed from a route by erasing the Valid data of the relevant directory number.
Before this command can be executed, the command for creating route access codes (5401) must have been executed.

See also ROUTE SELECTION, document 444/155 34-ASB 150 02 Uen.

Number series

3303
Predigits for normal route

This command is used to define predigits, if any, for a normal route. The predigits are transmitted before the dialled external number.

Predigits = 1-10

The command is used to differentiate between variable and fixed numbering schemes. Normally, predigits need not be stated for variable numbering schemes. Predigits are to be stated for fixed number series.

3304
Alternative routing

When all trunks between two exchanges are busy, the call can be sent via another exchange. An alternative route shall be defined for the call to be rerouted. Two different alternative routes can be defined.
The first alternative route is defined with command 3304. The second alternative route is defined with command 3306.

3305
Predigits for alternative route 1

Command 3305 is used to define predigits (if any) for the first alternative route. Command 3307 is used to define predigits (if any) for the second alternative route.
The predigits are transmitted before the dialled external number.

Predigits = 1-10

3306
Alternative routing 2

See command 3304

3307
Predigits for alternative route 2

See command 3305

1015
Number of predigits

This command is used to assign routes and their members a number which may be used for number analysis. This parameter will be used primarily by TCD and LCR.

The number given should contain 1 - 4 digits.

See also TRUNK CALL DISCRIMINATION (TCD), document 487/155 34-ASB 150 02 Uen.

Categorisation

1001 - 1008
Categorisation

These commands state which facility the trunk belongs to. The facility category controls the number of facilities to which the trunk has access to.

Trunks (and extensions) can be divided into 16 different facility categories (Valid data 0-15).

For each category and each facility it is possible to control whether or not the access to the facility shall be permitted.

1019
Night service

The command states the night-switching group to which the trunk belongs.

Valid data: 1 - 8

Night-switching of the PBX means that incoming calls to each individual trunk are routed to a common answering position. Night-switching of a trunk group means that incoming calls on trunks included in the group will be routed to a common answering position.

Outgoing traffic

1201
Line signalling

The command is used to select the line signal table. The selection is based on the type of the interworking exchange connected.
The initial valid data of the used line signal table depends on the type of the BTU and the market version.

1013
Dial tone to extension

The command is used to determine whether or not a dial tone shall be sent to callers (A-party) in case of outgoing calls.

1014
Result tone to parent exchange

The command is used to determine whether a result tone shall be sent to the parent exchange. This applies both to incoming and outgoing calls.

1302
Outgoing digit transmission

The command states how the digits are sent by the interworking exchange.

The initial valid data depends on the type of the BTU .

Valid data: 0 - 5

0 = Decadic impulsing
1 = DTMF
2 = MFC
3 = No sending of digits
4 = MFE1 (2/5)
5 = MFE2 (2/6)

The following default valid datas are trunk board dependent:

Valid data : BTU-A =0
BTU-C =0
BTU-E =0
BTU-D =2

1303
Impulse Type

The command is used at impulsing to determine the dialed digit's relation to the number of pulses.

The number of impulses 1 2 3 4 5 6 7 8 9 10

Valid data: 0-3

0 = digit 1 2 3 4 5 6 7 8 9 0
1 = digit 0 1 2 3 4 5 6 7 8 9
2 = digit 9 8 7 6 5 4 3 2 1 0
3 = digit 0 9 8 7 6 5 4 3 2 1

1304
Impulse frequency

The command states which impulse frequency is to be used at decadic impulsing.

Valid data : Yes / No

Yes = 10Hz
No= 16 Hz

1305
Impulse ratio

The command is used to determine which make/break relation (stated in percent) that is to be used at decadic impulsing.

Valid data: Yes / No

Yes = 40/60
No = 33/67

1306
Inter digit pause

The command is used to determine the pause between the digits valid for decadic impulsing.

Valid data: 00 - 15

00 = 300ms	08 = 700ms
01 = 350ms	09 = 750ms
02 = 400ms	10 = 800ms
03 = 450ms	11 = 850ms
04 = 500ms	12 = 900ms
05 = 550ms	13 =950ms
06 = 600ms	14 = 1000ms
07 = 650ms	15 = 1050ms

1307
Proceed-to-send signal from exchange

The command is used to state whether the exchange shall wait for a proceed-to-send signal (PTS signal) from the parent exchange. See command 1404 for wrong proceed-to-send signal if the exchange does not send any signal.
(Command 1308 states whether the proceed-to-send signal is the dial tone. See also command 1013, which states whether dial tone shall be sent to the extension.)

1308
Dial tone from parent exchange

The command states whether the proceed-to-send signal from the parent exchange is the dial tone. (Command 1307 states whether a proceed-to-send signal is sent by the parent exchange. See also command 1013 which states whether a dial tone shall be sent to the extension.)

1404
Waiting time before digit transmission

The command is used to determine the shortest time required by the parent exchange to receive digits for outgoing calls from ASB 150 02. The function is used when the parent exchange does not send any proceed-to-send signal as acknowledgement.

Valid data: 0 - 255 seconds

0 = No waiting time before digit transmission

1705
Clearing backwards type

The command is used to state whether clear backwards shall take place with a break in the loop (Y=Yes). For the alternative (N=No) clear backwards is achieved with pol. reversal back to idle polarity.

1710
Outgoing traffic, Seizure acknowledge

The command is used to state whether the line signal "seizure acknowledge" shall be received (exists) at an outgoing call.

NOTE: Ascertain that the signal is included in the selected line signal scheme.

1712
Outgoing traffic, EOS-signal

The command is used for outgoing traffic to state whether the EOS-signal shall be received after the interworking exchange has received the full number.

NOTE: Ascertain that the signal is included in the selected signal diagram.

1717
Outgoing traffic: Answering signal

The command is used to state whether the line signal "answer" shall be received (exists) at outgoing calls.

NOTE: Ascertain that the signal is included in the selected line signal scheme.

2009
Tone time per digit for DTMF-signalling

Determines the tone time per digit in milliseconds.

Valid data: 0-255

NOTE: Tone time = 0 gives continuous tone transmission (of first keyed digit). Intended for use when measuring the DTMF-signal.

2010
Interdigital pause for DTMF-signalling

Determines the pause between digits for DTMF-signalling.

1401 - 1423
Monitoring times

This command group is used to determine the supervision times for the traffic block.

Incoming traffic

1103 - 1104
Answering positions

See also ANSWER POSITION(S) FOR TRUNKS, document 112/155 34-ASB 150 02 Uen.

1021
Receive digits for incoming traffic

The command is used to state that incoming traffic on the line is associated with digit reception.

Valid data: Yes/No

Yes
for direct in-dialing lines and automatic incoming private trunks (tie lines).

No
the call will be signalled to the extension that has been programmed as individual answering position.

1023
Type of trunk

The command is used to state to which type of trunk the BTU is connected.

Valid data: 0-2

0 = Trunk to a public exchange (PE)
1 = Trunk from a public exchange with direct in-dialing (INDIALING)
2 = Trunk to a private exchange, tie line (TIE LINE)

1309
Dial tone to superior exchange

The command states whether the PTS-signal for incoming traffic consists of a dial tone.

1311
Number of received digits before EOS-signal

The command is used to determine the number of received digits for automatic incoming traffic before sending the EOS-signal to the superior exchange, e.g. a predetermined number of digits is always received before the EOS-signal is sent.

Valid data: 1 - 4 digits.

1706
Incoming traffic, Seizure acknowledge

The command is used to state whether the signal "seizure acknowledge" shall be sent as reply to "seizure" at an incoming call.

Valid data: Yes or No

NOTE: Ascertain whether the signal is included in the selected line signal scheme.

1707
Incoming traffic, PTS-signal

The command is used to state whether the "Proceed-To-Send" signal (PTS) shall be sent as line signal for an incoming call.

Valid data: Yes or No

NOTE: Ascertain whether the signal is included in the selected line signal scheme.

If "Proceed-To-Send" signal is to be sent as dial tone it is defined by command 1309.

1709
Incoming traffic, Answering signal

The command is used to state whether the line signal "answer" shall be sent at an incoming call when the call is answered in the exchange.

Valid data: Yes or No

NOTE: Ascertain whether the signal is included in the selected line signal scheme.

1411
Time supervision first digit

The command is used to state the supervision time for incoming calls between seizure and first digit. The parameter shall only be used for direct in-dialing lines and automatic incoming tie lines.

Valid data : 0 - 255 seconds.

0 means that no time supervision takes place.

1412
Time supervision between digits

The command is used to state the supervision time for incoming calls between digits. The parameter shall only be used for lines of type direct indialling and automatic incoming tie lines.

Valid data: 0 - 255 seconds.

If the parameter is set to zero there will be No time supervision.

1413
Time supervision of answer

The command is used to state the supervision time for incoming calls between End Of Selection and answer before rerouting to an alternative answering position. The parameter shall only be used for lines of type direct in-dialing and automatic incoming tie lines.

Valid data: 0 - 255 seconds.

If the parameter is set to zero there will be no re-routing.

1802
Predigits for incoming number

The command is used to state the digits that shall be inserted before the incoming number before it is analyzed.

Valid data: 1-2 digits

1803
Irrelevant digits

The command is used to state how many initial digits in the incoming number shall be omitted before the number is analyzed.

Valid data: 0-3

Name String

6601
Administrative data for extensions and trunks

This command defines a name string for extensions and trunks.

```
10 Jul 14:40   +15°
ADM. DATA EXT/TRUNK   6601 xxxx
backward  forward                return
```

xxxx Enter extension's or trunk's directory number

Press **Enter** two times

```
10 Jul 14:40   +15°
nnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnn
                                 return
```

nn..n Enter the name of the extension or trunk, a maximum of 35 characters

6501
Programming of data records

This command defines a name string for a directory number, e.g. for a route.

```
10 Jul 14:40   +15°
ADM. DATA GENERAL     6501              >
 backward  forward                return
```

Press **Enter**.

The display shows:

```
10 Jul 14:40   +15°
ENTER DIR. No                          xxxx
                       pf_3      return
```

xxxx Enter the relevant directory number

Press **Enter**.

The display shows:

```
10 Jul 14:40   +15°
_                                      xxxx
 backward  forward    pf_3       return
```

Enter the relevant text, maximum 35 characters.

Trunk answering position

The command group 11 determines the destination of incoming and rerouted calls.

Incoming calls are routed to the specified answering position. Specify the answering position by its directory number. The command "4001 alternative answering position for general operator“ is Not active when the directory number for an individual answering position is defined.

1101 - 1104
Programming of answering positions

On system start all trunks are directed to directory number 200.

Four different answering positions can be programmed for each trunk:

- 1101 Answering position, day
- 1102 Answering position, night
- 1103 Alternative answering position, day
- 1104 Alternative answering position, night

A call is directed to an alternative answering position when the normal answering position does not answer within a predetermined time

```
10 Jul 14:40   +15°
ANSWERING POS DAY     1101 xxxx     zzzz
 backward  forward     c/i      return
```

xxxx Enter the directory number of relevant trunk

zzzz Enter the directory number of the relevant answering position.
Default data = 200

Step to commands 1102 - 1104 and repeat above procedure.

NOTE: Make sure that the trunk is presented on a function key, if you want to delete directory numbers for above commands.

Adjust Filter coefficient for BTU-E:

1609
Filter coefficient

This command is used to state the filter coefficient in the analogue interface on the line board.

The impedance is stated as:
Rs (ohm) + Rp (ohm) // Cp (nF).

Valid data: 98 - 255

Equipment

Two different printed boards provide the physical connection with different types of signalling:
BTU-E and BTU-C.

The function requires one or more BTU-E or BTU-C boards.

BTU-E - E&M Tie Lines

The BTU-E provides four E&M tie lines capable of handling various signalling schemes:

- Swedish E&M
- Continous E&M signalling, A-format or D-format, 2-wire or 4-wire speech connection
- Discontinuous E&M signalling, 2-wire or 4-wire speech connection
- E&M with blocking on separate E and M wires (for 2-wire and 4-wire speech connection)
- American E&M
- Tone signalling according to CEPT L1 or SSAC 15 A
  (4-wires used for speech and signalling)
- Application for paging equipment according to ESPA standards (2-wire speech including signalling for "paging in progress“ and "paging equipment not present“)

Different types of BTU-Es

BTU-E :

1 2- or 4-wire speech-connection has to be adjusted via jumpers on the board.

2 Set the Line signal schemes via command 1201.

The following Line signals chemes are noT supported:

44 CEPTL 1
45 CAILHO - discontinous
46 SSAC 15 - A

BTU-E / 1:

1 Set the line signal-scheme via command 1201.

The following line signal-schemes are not supported:

44 CEPTL 1
46 SSAC 15 - A

2 2- or 4-wire speech-connection has to be adjusted via command 1609.

Only the following setting supports 4-wire speech connection: “ 116 ”
All the others support 2-wire speech connection.

HINT: If you program command 1609 for 4-wire speech connection, you HAVE TO set the line signal-scheme once again !

BTU-E / 2:

1 Set the line signal-scheme via command 1201.

All line signal-schemes are supported.

2 2- or 4-wire speech-connection has to be adjusted via command 1609.

Only the following setting supports 4-wire speech connection: “ 116 “
All the other support 2-wire speech connection.

HINT: If you program command 1609 for 4-wire speech connection, you HAVE TO set the line signal-scheme once again !

BTU-C - DC-Loop Tie Lines

The BTU-C is available in two versions.

The Version /2 of the BTU-C provides 4 DC-loop tie lines.
In Australia Version /1 can only be used as a trunk board and cannot be used as a tie-line board.

Registers for DTMF, MFC or MFE signalling.

To use the register function as a common system resource for all trunklines, one of the following boards has to be avaialble in the system

REG , BTU-D, VMU-HD or MFU

The number of available registers depends on the load of the digital signal processors (DSP), see board description in the document SYSTEM DESCRIPTION ASB 150 02, document 1551-ASB 150 02 Uen.

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		Database reference	
		364.fm	

NETWORKING - VPN SERVICE FROM PSTN

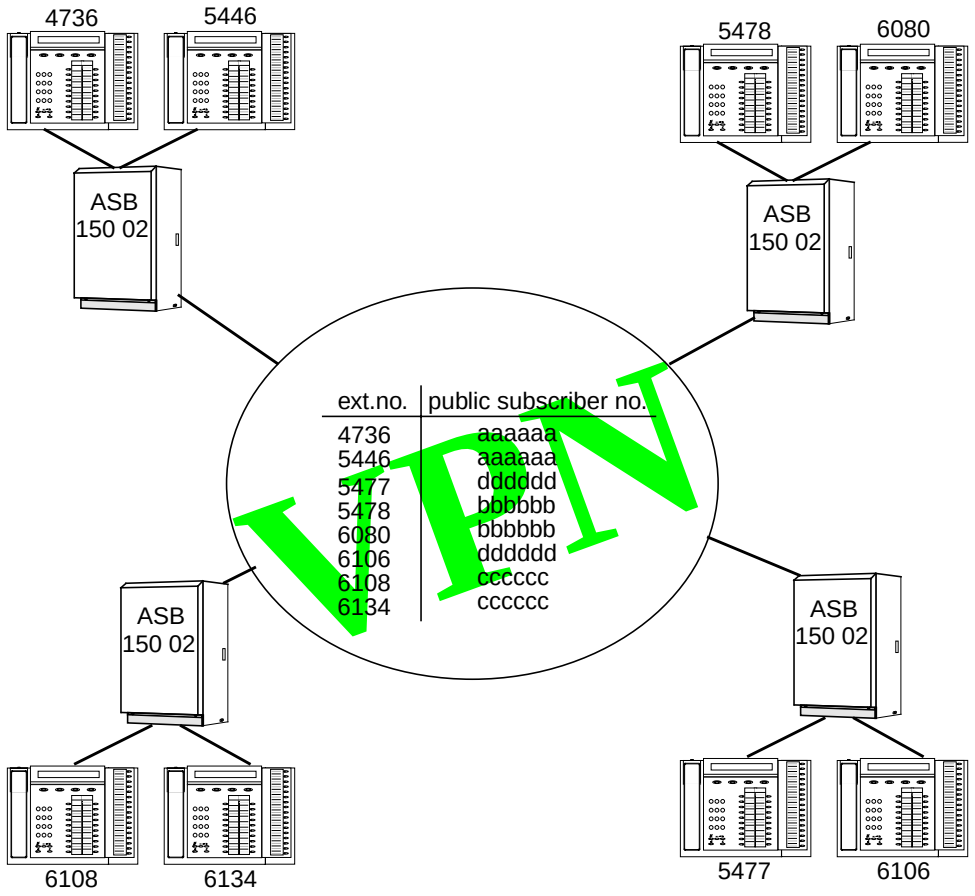
Definition / Use

There are two possibilities to build up a private network:

- Using a private network, based on leased lines from the PSTN. The leased lines are paid for regardless of the capacity that is used.
- Using the Virtual Private Network service (VPN) from the PSTN, it is possible to build up a private network without having permanent connections to the different locations.
  The VPN service has all members of the network stored in a central database and builds up the connection between the different locations on request through the public network.
  The customer has the advantages of a private network while paying only for the capacity and services used.

The VPN service in the public network (market-dependent) offers customers the service that all extensions of their network, even if located in different locations, can be reached via one common public subscriber number.
Only the extension number defines where the desired person is located, because the extension number will be translated into the real public destination number by the VPN service from the PSTN.

The VPN service from the PSTN enables the customers to create a coordinated number plan within the network by offering the possibility to mix the numbers between the different locations (see the drawing below). Called extension numbers which are not located in the home exchange will automatically seize a free trunk/route defined for VPN calls, and handed over to the VPN services from the PSTN which initiate the routing to the desired extension number.



Operation

Incoming calls

Seen from the VPN

All extensions can be reached via one common public subscriber number even if the extensions are located in different areas.

Seen from the ASB 150 02

Incoming calls from the VPN service from the PSTN will be treated like normal incoming external calls.

Outgoing calls

After detecting that a vacant number has been dialled, ASB 150 02 decides to hand over the required destination number for further number analysis to the VPN service from the PSTN. The whole number for accessing the VPN service is assembled from the programmed trunk/route number, the programmed predigits and the dialled number.

If the number exists in the PSTN - VPN database the call will be established to the desired destination.

If the number does not exists in the PSTN - VPN database the caller will receive the congestion tone (market dependent) from the public network.

Numbering plan

Extensions belonging to the different areas have a common 4-digit number plan and it is possible to mix the extension numbers in all different locations (e.g.: extension 4711, 4713 are located in A, extension 4712 is located in B and 4714 is located in C).

In each location it is possible to reach all members of a VPN by dialling a 4-digit directory number.

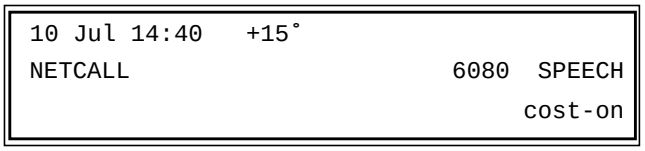
Example for initiating a VPN service call:

Extension 5446 calls extension 6080
Dialled digits: 6080
Programmed trunk/route number: 88
Programmed predigits: 52304

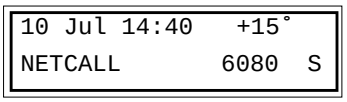
Total number for the VPN service call:
88 52304 6080

Making a call via the VPN service from the PSTN, the display shows a free programmable text, for example:
NOTE: Command 6501 has to be programmed in the correct way, e.g.: "NETCALL".

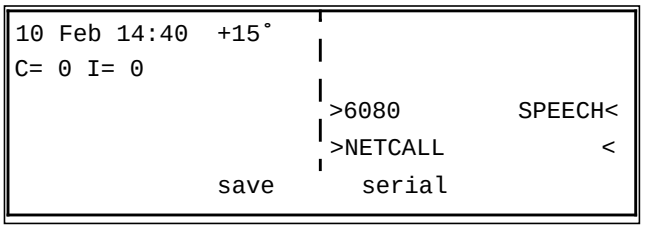
EXECUTIVE Telephone



STANDARD Telephone



OPERATOR's Console



Capacity

A maximum of 20 predigits can be programmed.

The extension numbers in the network must have a fixed length of 4 digits and may not be programmed.

Limitations

It is not possible to use the features
LAST EXTERNAL NUMBER REDIAL and
SAVED EXTERNAL NUMBER REDIAL
for PSTN-VPN numbers.

Programming

2090
VPN service from PSTN

This command states whether or not ASB 150 02 is in a PSTN-Virtual Private Network configuration or not.

Valid data YES/NO

Default data NO (ASB 150 02 is not in a PSTN-VPN configuration)

2091
Predigits sent to PSTN-VPN

This command states the predigits included in calls via the VPN service from the PSTN. The total number for accessing the network is assembled from the programmed trunk/route number, the programmed predigits (number of the VPN service) and the dialled number.

Default data EMPTY

2092
Trunk/Route selected at PSTN-VPN calls

This command states which trunk/route number is selected at VPN service calls. The whole number for accessing the network is assembled from the programmed trunk/route number (this command), the programmed predigits and the dialled number.

Default data EMPTY

6501
Directory names

This command states a list of administrative data for directory numbers. This list can be used to state the display text during VPN service calls. A free programmable 12 digit text can be entered.

Enter directory number " D20 ".

Default data EMPTY

NOTE: This command should be programmed in such a way that the user can distinguish between an internal call or a call via the net.

Equipment

None.

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SEA/EBBMP T.Preissner	SEA/EBBX/E	365/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved / Kontr/Checked		Datum/Date / Rev	Tillhör/Referens-File/Reference
SEA/EBBMP		99-07-15 / A	ASB 150 02
		Database reference	
		365.fm	

NETWORKING BASED ON DIGITALES LINES

Contents **Page**

Definition 3
Definitions & Abbreviations 4
Standards 5
Use 6
Private Network with only ASB 150 02 systems 6
Private Network with ASB 150 02 and ASB 501 sytems. 6
Private Network with ASB 150 02 and other-vendor PBXs 7
Operation 8
General 8
Networking packages 8
Features and Services - Overview 10
System feature - Common Corporate Numbering Plan 11
System feature - Location code 14
System feature - Node Identity 14
System feature - Private Network Routing 14
System feature - Number conversion 16
System feature - Basic call 17
Supplementary service - Calling/Connected Line/Name Identity 18
Supplementary service - Advice of charge 23
Supplementary service - User-to-User Signalling 24
Needed UUS services for proprietary CN features 26
Proprietary service - Account number. 27
Proprietary service - Call Transfer. 28
Proprietary service - Centralised Operator 31
Proprietary service - Camp on 32

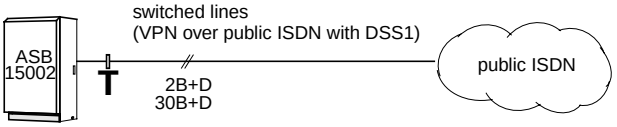
continued

Proprietary service - Called party number transfer via UUS1 33
Proprietary service - Intrusion 34
Proprietary service - Message waiting indication 34
Proprietary service - Rerouting 35
Dependency of Facilities on Internal / External Handling of Private Network Calls 36
Capacity / Limitations 40
Programming 40
Equipment 59

Definition

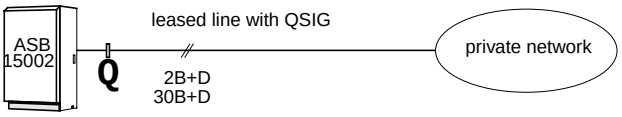
Digital Private Networking is centered around two main concepts:

1 Digital private networking between ASB 150 02 and ASB 501 systems, based on DSS1 signalling * over switched public lines.



The interface between the private network and ASB 150 02 is at the T-reference point

2 Digital private networking between ASB 150 02 / ASB 501 and other-vendor exchanges, based on QSIG ** over leased lines.



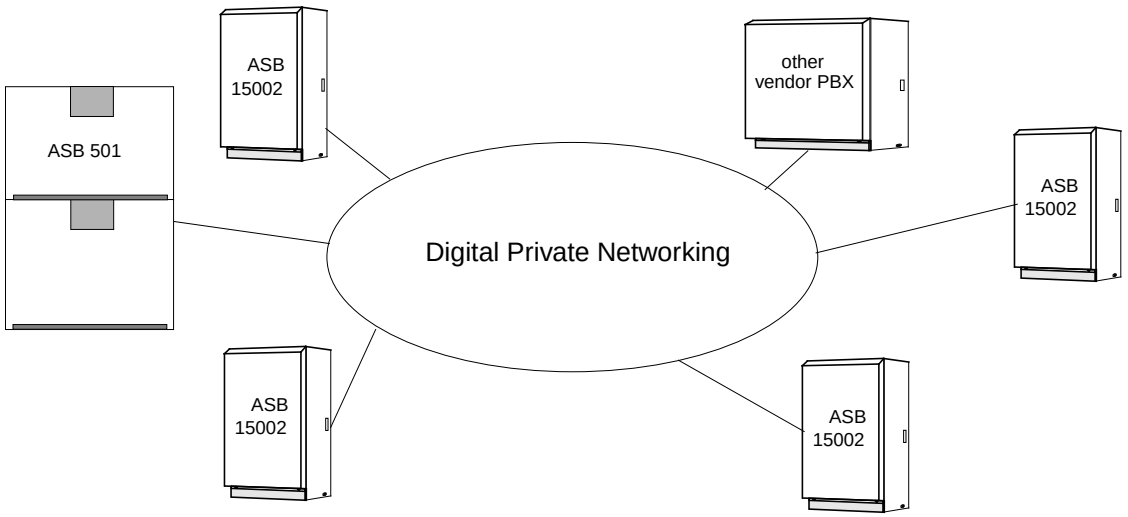
The interface between the private network and ASB 150 02 is located at the Q-reference point

At the interface between the private network and ASB 150 02, Basic Access (BA, = 2B+D) and Primary Rate Access (PRA, = 30B+D) are supported for point-to-point connection, at the Q-reference point as well as the T-reference point.

Connection via switched public ISDN lines is referred to as a part of a Virtual Private Network, as non-permanent connections are used.

The feature "VPN service from PSTN" which allows to connect ASB 150 02 via switched lines with a public network supporting the central database for storage of all private network numbers is not affected by the VPN functionality in ASB 150 02 (for more information concerning the feature "VPN service from PSTN" refer to the corresponding chapter in this document).

* ETSI standard
** ETSI / ECMA / ISO standard



Definitions & Abbreviations

AOC	Supplementary Service Advice of Charge
BA	Basic Access (2B+D), T- or Q-reference point to the network
Calling/Connected Line Identity	CLIP (=Calling Line Identification Presentation), COLP (=COnnected Line identification Presentation) and CLIR (=Calling/Connected Line Identification Restriction).
Calling/Connected Name Identity	CNIP (=Calling Name Identification Presentation), CONP (=COnnected Name identification Presentation) and CNIR (=Calling/Connected Name Identification Restriction).
CN	Corporate Network
CN call	Call between CN users
CNP	Co-ordinated Numbering Plan
COP	Centralised Operator
Corporate digital networking	Private digital networking
DSS1	Digital subscriber Signalling System number 1
ECMA	European Computer Manufacturers Association
ETSI	European Telecommunications Standards Institute
FECU	Feature Enabling Control Unit
Gateway call	A call setup between two trunk interfaces using different signalling protocols, (e.g. QSIG incoming to DSS1 outgoing)
IE	Information element All QSIG messages are built up of different information elements, which contain specific information
ISDN	Integrated Services Digital Network
ISDN service functionality	Calls where features and services are supported by DSS1 supplementary services.
LOC	LOcation Code based numbering plan
Main node	A PBX in a private network that supports 1) gateway functionality, 2) centralised service features (e.g. Centralised Operator), 3) intelligent routing service
node	PBX in a private network environment
Non-proprietary CN call	Call between CN users where no proprietary services are supported
Other vendors PBX	Exchange which does not support proprietary services
PRA	Primary Rate Access (30B+D), T- / Q-reference point to the network
Proprietary CN call	Call between CN users where proprietary services are supported
Proprietary PBX	Exchange which supports proprietary services (ASB 150 02, ASB 501)
QSIG (PSS1)	Q interface SIGnalling protocol, a uniform international corporate network signalling standard.
QSIG service functionality	QSIG call (=Corporate call via the private ISDN network) with features and services being supported by QSIG supplementary services.
Private lines	tie lines + leased lines
Proprietary service functionality	VPN or QSIG call with features and services being supported by DSS1 or QSIG supplementary services, and additionally, proprietary features and services being supported by the proprietary ISDN UUS protocol.

Definitions & Abbreviations (continued)

PSS1	Private Signalling System, Number 1
Public gateway exchange	The PBX in the private network from where calls leave the private network and enter the public network.
TCM	Travelling Class Mark
TON	Type Of Number
UUI	User-to-User Information
UUS	User-to-User Signalling
VPN	Virtual Private Network
VPN call	A VPN call is a corporate call via the public ISDN network (T-reference point) for which the private called destination number is partly or completely converted by ASB 150 02 into a public called destination number

Standards

QSIG Basic Call control
according to the ETSI and ISO standards: ETS 300 172 and ISO 11572, 11574

QSIG Generic Functional Protocol (GFP)
according to the ETSI and ISO standards: ETS 300 239 and ISO 11582, within the scope of the supported QSIG Supplementary services (see below)

QSIG Supplementary services CLIP, COLP, CLIR
according to the ETSI and ISO standards: ETS 300 173 and ISO 14136

QSIG Supplementary services CNIP, CONP, CNIR
according to the ETSI and ISO standards: ETS 300 238 and ISO 13864, 13868

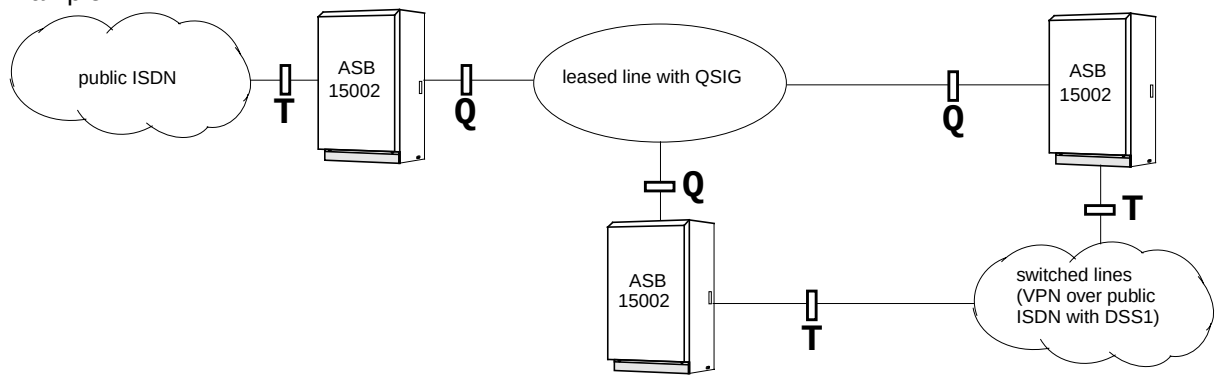
QSIG Supplementary service Advice of Charge
according to ECMA 211/212 standard

Use

Private Network with only ASB 150 02 systems

The following example shows a private network with only ASB 150 02 nodes.
Standard QSIG and proprietary services are supported via leased and / or switched lines.

Example:

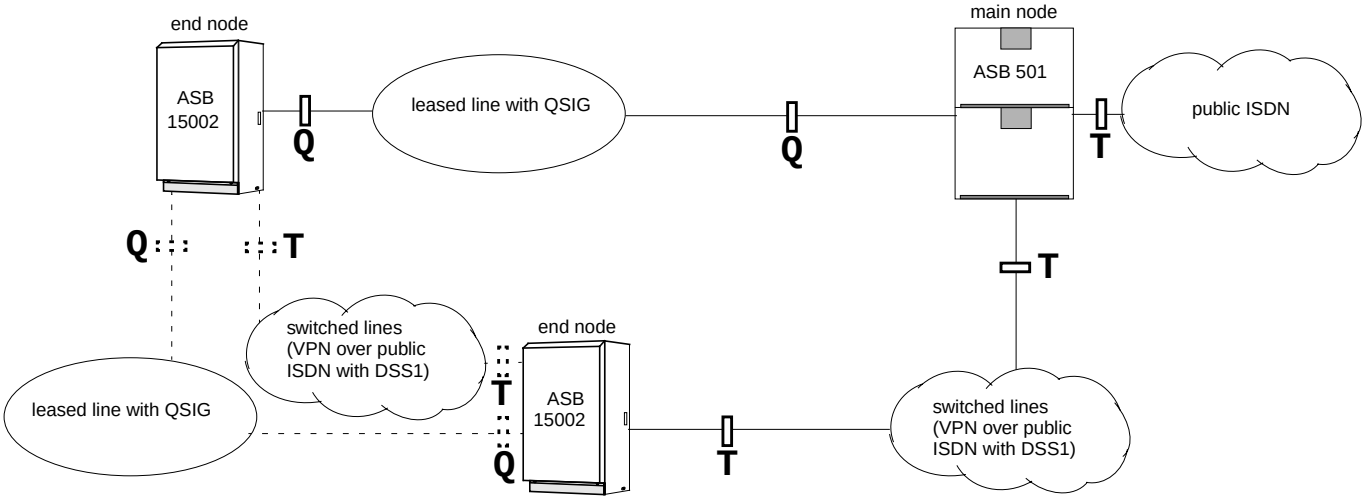


The symbols mean 1 or more Q-/T-interfaces.

Private Network with ASB 150 02 and ASB 501 sytems

The following example shows a private network with ASB 501 as main node and ASB 150 02 as end nodes ("branch offices"). Standard QSIG and proprietary services are supported via leased and / or switched lines.

Example:



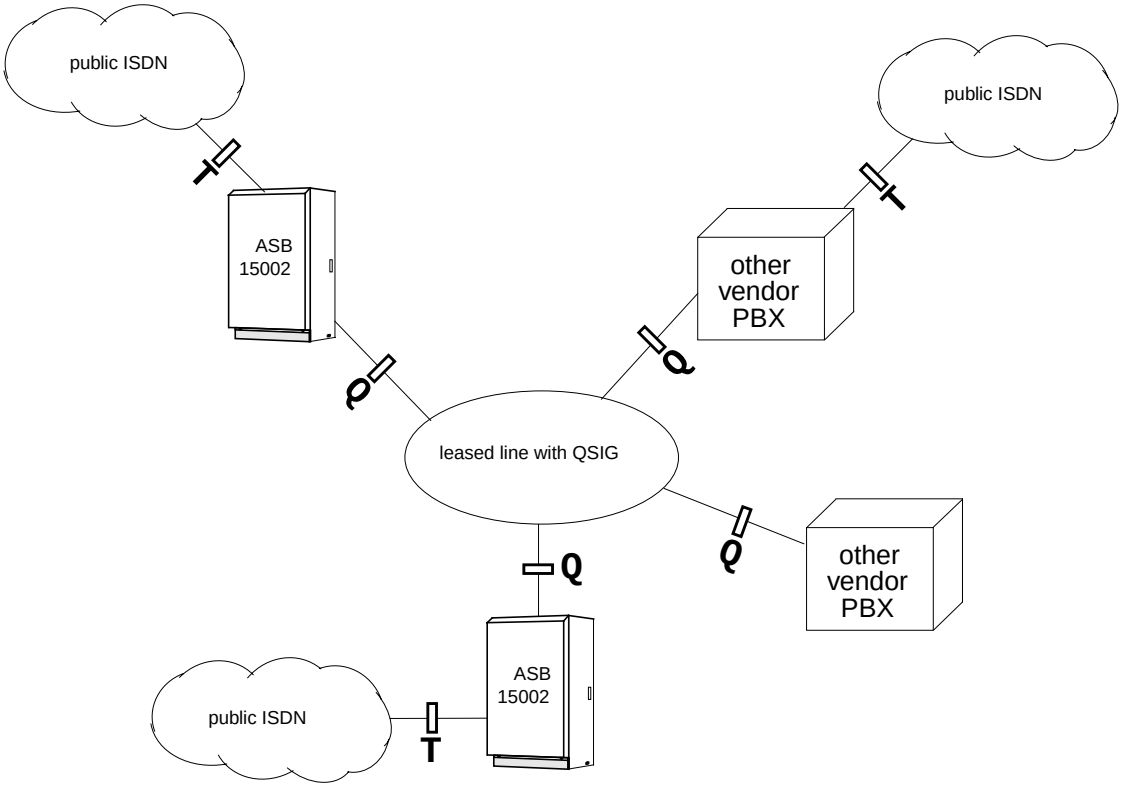
The symbols mean 1 or more Q-/T-interfaces.

All gateway and main node functionalities are provided by ASB 501. The ASB 150 02 nodes can have own public network access for own public traffic, so as not to overload connections with the main node. Furthermore, it is also possible to connect the ASB 150 02 end nodes (dotted lines) directly, to prevent overloading of connections to the main node by traffic carried only between the end nodes.

Private Network with ASB 150 02 and other-vendor PBXs

ASB 150 02 relies on QSIG signalling via leased lines to connect the system to other-vendor PBXs. Gateway between public and private network is only supported for Basic Calls.

Example:



The symbols Q T mean 1 or more Q-/T-interfaces.

Operation

General

A digital private network depends on two major issues:

1 Type of interworking PBX equipment
There are two different types of PBX equipment to be connected in a private network:

a Ericsson PBXs,
ASB 150 02 or ASB 501:
- interconnection based on DSS1 (via public ISDN or leased lines) signalling or QSIG signalling (via leased lines)
- supporting the standard and proprietary services and features

b other-vendor PBX:
- interconnection based on DSS1 signalling (via public ISDN or leased lines) or QSIG signalling (via leased lines).
- supporting the standard services and features

2 Type of network
There are two different types of interconnected networks:

a ASB 150 02 is interconnected to other nodes via the public switched ISDN network as a node in a VPN:
- public ISDN signalling protocol DSS1 signalling is used
- basic call control and supplementary services are based on ETSI standards
- proprietary services are carried in standard public ISDN supplementary service UUS using the proprietary ASB 501 protocoll.

b ASB 150 02 is interconnected to other nodes via leased lines (tie lines):
- QSIG signalling is used
- basic call control and supplementary services are based on ECMA/ETSI standards
- proprietary services are carried in standard public ISDN supplementary service UUS using the proprietary ASB 501 protocoll.

Networking packages

The private digital networking functionality is packaged and licensed.

A Networking Package license is valid for both Basic Access and Primary Rate Access.

Protection covers services and system features.

In order to have access to the services of a given Networking package (Standard digital Networking, Full digital Networking), the proper FECU must always be plugged in on the CPU-D4. The connected FECU defines the enabled services as well as the number of supported interface (B-channels) used for networking purposes.

For more information regarding the Networking Packages, see also

INSTALLATION INSTRUCTION
EXCHANGE CABINET BDV 113 08,
document number 1531-BDV 113 08 Uen,

INSTALLATION INSTRUCTION
EXCHANGE CABINET BDV BS 101 05,
document number 1531-BDV 101 05 Uen
chapter
FEATURE ENABLING CONTROL UNIT (FECU)

and

FACILITY DESCRIPTION - GENERAL,
document number 15534-ASB 150 02 Uen
chapter FUNCTIONALITY OF ASB 150 02 WITH / WITHOUT CONNECTED FECU.

Networking package - Overview

Networking Packages	Standard digital Networking Package	Full digital Networking Package
CN-System features	X	X
Supplementary Services	X	X
Proprietary Services		X
Interworking with ASB 150 02	X	X
Interworking with ASB 501	X	X
Interworking with other vendors	X	
switched lines - DDS1 standard service (VPN) - proprietary services over UUS	X	 X X
leased lines - QSIG standard services -proprietary services over UUS	X	 X X

Features and Services - Overview

System features

- Common corporate numbering plan
- Location code
- Node identity
- Private Network Routing (over leased and fixed lines)
- Number conversion
- Basic call routing (gateway traffic) between public and private ISDN.
- Basic call services *
  - Calling line category
  - Transit counter

Supplementary services *

- Advice of charge (QSIG)
- Calling/Connected Line Identity (QSIG and DSS1)
- Calling/Connected Name Identity (QSIG)
- UUS 1, 2, 3; carrier mechanism for proprietary service (QSIG and DSS1)

*) QSIG standard services

Proprietary services based on the UUS protocol

- Account Code
- Bypass call forwarding
- Call back on no reply/busy
- Call diversion & follow me
- Call Transfer
- Calling line category
- Calling/Connected line identification
- Calling/Connected name identification
- Camp on
- Centralised Operator
- Day/night service notification
- Intrusion
- Message waiting indication
- Rerouting
- Transit counter
- Travelling class mark

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		365/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved	Kontr/Checked	Datum/Date	Rev / Tillhör/Referens-File/Reference
		99-07-15	A

System feature - Common Corporate Numbering Plan

In the Common Corporate Numbering Plan each addressable entity in the private network is identified by a unique network identity.

A network identity consists of:

- a unique location code for each node having 1-4 digits
- an internal directory number, having 1-4 digits

3 different types of Common Corporate Numbering Plan are possible:

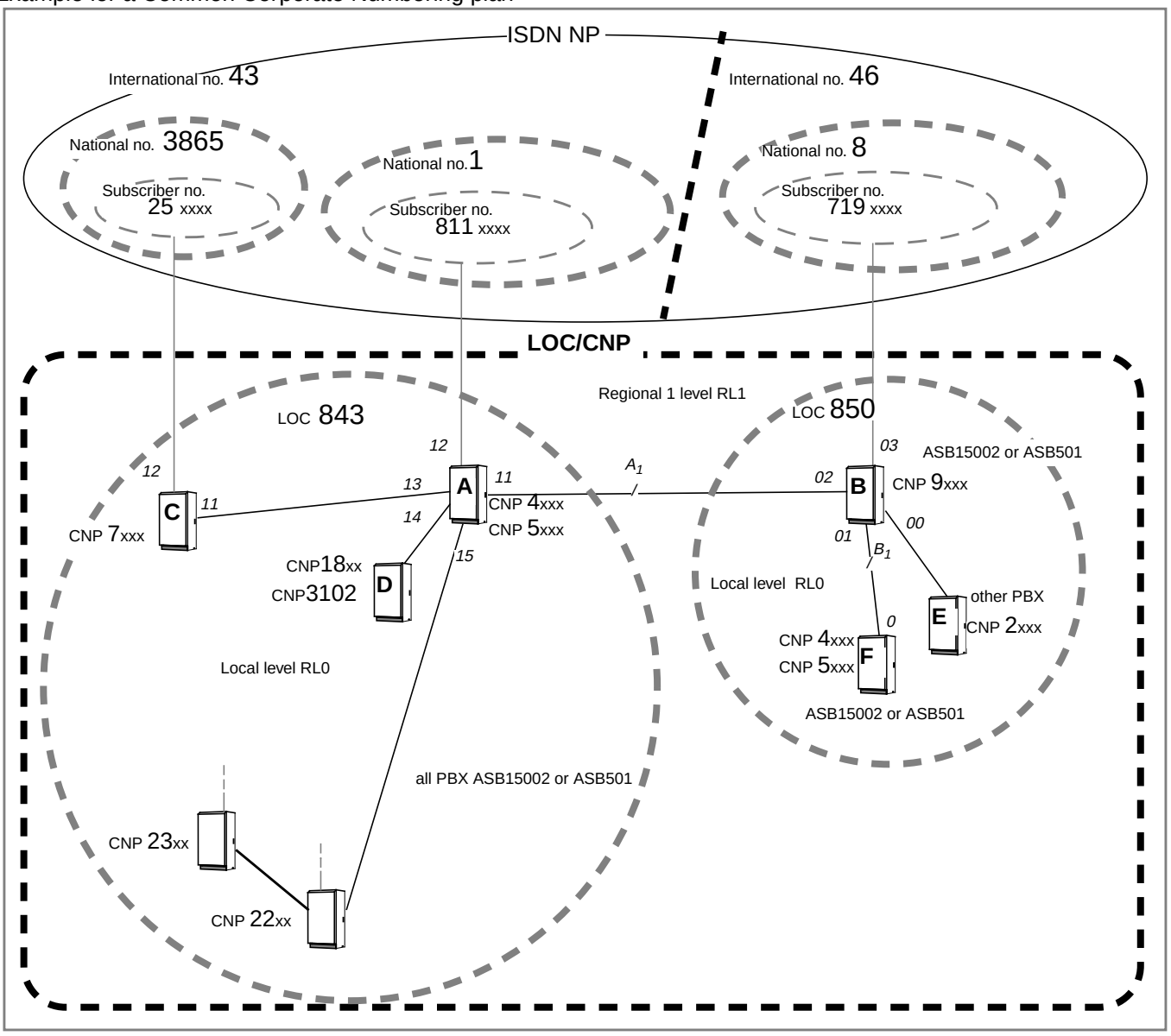
1 LOC (LOcation Code based numbering plan)
Each node or group of nodes is identified by a unique location code. One or more nodes can form a logical group. The grouping of nodes is independent of geographical or public boundaries.
The dialling format is: LOCxxxx
LOC.....location code
xxxx.....internal directory number

2 CNP (Co-ordinated Numbering Plan)
Each node is identified by a unique internal directory number. This numbering plan is related to the fixed or co-ordinated numbering plan for tie-line traffic but:
- no prefixing is necessary
- complete dialled number is sent to the network
The dialling format is: yyxx
yy.....node identity
yyxx...internal directory number

3 Mixed numbering plan
Covering the nodes within a local segment by a CNP and covering the whole network by LOC.
I.e.: Nodes within a local segment are covered by CNP and one or more logical segments are covered by one LOC.

* QSIG standard services

Example for a Common Corporate Numbering plan



Example of programming the Private Network Router (For this example only 2 route choices will be used).

PBX A:

Private network Access Code	Destination PBX	TON priv calling	1:route choice	TON priv/pub called	digit arrangement remove	digit arrangement predigits	2:route choice	TON priv/pub called	digit arrangement remove	digit arrangement predigits
18	proprietary	RL0	14	UNK, priv						
3102	proprietary	RL0	14	RL0						

22	proprietary	RL0	15	UNK, priv						
23	proprietary	RL0	15	UNK, priv						
7	proprietary	RL0	13	UNK, priv			12	UNK,pub	1	03865257
850	proprietary	RL1	11	UNK, priv			12	UNK,pub	3	00468719

PBX B:

Private network Access Code	Destination PBX	TON priv calling	1:route choice	TON priv/pub called	digit arrangement remove	predigits	2:route choice	TON priv/pub called	digit arrangement remove	predigits
2	other	RL0	00	UNK, priv						
4	proprietary	RL0	01	UNK, priv						
5	proprietary	RL0	01	UNK, priv						
843	proprietary	RL1	02	UNK, priv			03	UNK,pub	3	00431811

PBX C:

Private network Access Code	Destination PBX	TON priv calling	1:route choice	TON priv/pub called	digit arrangment remove	predigits	2:route choice	TON priv/pub called	digit arrangment remove	predigits
3102	proprietary	RL0	11	RL0			12	NAT	4	18113102
4	proprietary	RL0	11	UNK, priv			12	UNK,pub	1	018114
5	proprietary	RL0	11	UNK, priv			12	UNK,pub	1	018115
18	proprietary	RL0	11	UNK, priv			12	UNK,pub	2	0181118
22	proprietary	RL0	11	UNK, priv			12	UNK,pub	2	0181122
23	proprietary	RL0	11	UNK, priv			12	UNK,pub	2	0181123
850	proprietary	RL1	11	UNK, priv			12	UNK,pub	3	00468719

PBX F:

Private network Access Code	Destination PBX	TON priv calling	1:route choice	TON priv/pub called	digit arrangement remove	predigits	2:route choice	TON priv/pub called	digit arrangement remove	predigits
2	other	RL0	0	UNK, priv						
9	proprietary	RL0	0	UNK, priv						
843	proprietary	RL1	0	UNK, priv						

System feature - Location code

Within a “Location” (Arear) one or more PBXs may be grouped together in order to be identified by the Location code consisting of up to 4 digits. This number is used in a corporate network to define the PBX, or a group of PBXs to which the call should be routed.

System feature - Node Identity

Within a corporate network every PBX is identified by the Node Identity consisting of up to 4 digits. This number is used in a corporate network to define the PBX to which the call should be routed.

The node-ID is implicitely given with the definition of routes in the other connected nodes.

In a mixed number plan consisting of several locations (groups of PBXs) each PBX in the corporate network may be reached by dialling the Location Code and the Node Identity of the desired PBX. If the location only consists of one PBX, this PBX will not have a node-ID.

System feature - Private Network Routing

Defintion

In ASB 150 02 without Digital Private Networking two types of external call routing are available:

- basic routing
- least cost routing.

Basic routing gives access to defined trunk(s), but makes alternative routing by a simple prefixing to the called number (via tie line) also possible.

Least cost routing (LCR) makes a more enhanced analysis of the route (carrier) choice and, if necessary, carries out a number conversion of the destination number. Cross reference tables enable the destination number conversion between different types of network choices.

Both routing features do not meet the requirements and are not suitable for the structure of private network routing.

For private network calls the Private Network Router (PNR) will be initiated as soon as the internal number analysis gives a private access number.

The PNR is intended to be a routing mechanism of its own, which has the following main tasks:

Routing based on dialled number
According to the dialled number a destination number conversion based on the chosen route will be performed

VPN functionality
VPN functionality with full number conversion of private network directory numbers to public numbers (conversions up to max. 16-digit public directory numbers.)

Alternative routing
The PNR offers 4 route choices for each private network directory number, with the first one having the highest and the fourth one the lowest priority.

Route selection principle

The 4 route choices are always available in case of internaly originated calls, as well as non-proprietary transit calls. All route choices will be checked according to their priority and if all route choices fail due to one of the special causes described below, the call will be released and the originator will receive congestion. When there is a programmed trunk reroute position, the transit calls will be rerouted according to the conditions in the transit node, otherwise the transit node sends congestion to the preceding PBX, and this exchange may perform alternative routing according to its capabilities.

In case of proprietary transit calls the number of available route choices can be restricted. This restriction makes it possible to exclude unintentional routes (e.g. public connections) and to force the preceding PBX to perform a more cost effective alternative routing (e.g. by selecting a leased line).

Internal calls via LCR will only use the first route choice. If this route choice cannot be accessed due to one of the special causes described below, the LCR function selects the next carrier according to the LCR analysis.

Causes which force the PNR to perform alternative routing

- Busy route
  All trunks included in the route are occupied or blocked.
- Travelling Class Mark (TCM) mismatch
  The TCM value of the originator is lower than that requested from the route.
- Network failures
  Network failures will normally be detected after seizure of a route and call set-up will be released by the network, before any alerting or before connection to the desired party can be established.

  The following network problems will be detected.
  - (2) No route to specific transit network
  - (3) No route to destination
  - (21) Call rejected
  - (27) Destination out of service
  - (34) No circuit/channel available
  - (38) Network out of order
  - (41) Temporary failure
  - (42) Switching equipment congestion
  - (44) Requested circuit/channel not available
  - (47) Resource unavailable, unspecified
  - (58) Bearer capability presently not available
  - (81) Invalid call reference value
  - (82) Identified channel does not exist

  After release of the trunk, a new call set-up will be established automatically. Every call set-up will be logged in a CIL record.

Operation

This PNR facility can be accessed by:

- the user dialling the PNR number
- a re-routed call from another router, e.g. LCR (routing from PNR back to LCR is not allowed due to the fact that it is not logical and in order to avoid possible looping).
- a dialled-in number from network,
  i.e. continues as gateway / transit call

Capacity

A maximum of 1000; 1-4 digit private network directory numbers can be defined

System feature - Number conversion

Definition

The entries in the PNR contain 1-4 digit private directory numbers being used to convert the dialled number to the addressed CN node (partial private number or to the complete private number

Partial private number

If the private network access number covers only the required node, the node can be reached, but the user has to continue the dialling process in order to reach the required extension.

In case of corporate calls via the public network, the remaining part (= directory number) of the complete number is sent out transparently without any further conversion. This requires a relation between the private numbering plan (=PNP) and public (ISDN) numbering plans. The last digits of the PNP number and the partial DDI number of the ISDN numbering plan have to be the same, i.e. the same directory number.

The dialling format is: LOC xxxx -> PDN xxxx

LOC = network location code (1 - 4-digit network location)
PDN = public destination number (1 - 16-digit public network number)
xxxx = post dialled digits (desired directory number)

Example: (see PNR table on page 12)

850 is programmed as a Private Access Number corresponding to the LOCation code number. The user dials a private network number **850** 2xxx. The call will be routed to the public network and must therefore be converted into the corresponding public number **00 46 8 719** 2xxx. The number conversion of the LOCation code 850 into the subscriber number 00 46 8 719 is possible, but the postdialled directory number is sent to the network without any translation or check by the system. In both numbering plans, private and public, the directory number part therefore must be the same 2xxx in order to reach the same destination.

Complete private number

If the private network access number covers the complete private number, the called destination (end extension) can be reached without suffix dialling.

There are however, restrictions:

- The complete private number must be a 1 - 4-digit internal directory number
- The complete public number conversion is limited to 16 digits

The dialling format is: xxxx -> PDN

xxxx = complete private number (1-4 digit private network number)
PDN = public destination number (1-16 digit public network number)

Example: (see PNR table on page 12)

3102 is a complete private network number and has been programmed as Private Network Access number. The user dials the private number 3102 which will be routed e.g. to the public network and must therefore be converted into the corresponding public number 18113102. A complete number translation is possible and by this even the least significant digits can be converted.

System feature - Basic call

Basic Call is used for circuit mode switched calls like voice, video or data.

Three types of logical ISDN network accesses are possible:

1 public ISDN,
non-corporate network access via the public network

2 private QSIG,
corporate network access via the private network

3 private VPN,
corporate network access via the public network

In conjunction with basic call control, the following network features and services are possible:

- Calling line category: QSIG and proprietary
- Transit counter: QSIG and proprietary
- Travelling class mark: proprietary

Basic call service - Calling line category

Calling line category functionality is used to indicate the category of the calling/connected party involved in the call to another PBX in the corporate network.

Basic call service - Transit counter

Transit counter functionality limits the number of transit points in the corporate network through which a call can be routed in order to avoid uncontrolled looping in the network.

Basic call service - Travelling Class Mark (TCM)

The TCM feature makes possible to control and restrict the call originator (user) of routing in private networks. Each originator (e.g. extensions, operators, incoming trunks) is assigned a ‘facility restriction level’ category which is passed through the network as TCM value. In addition, each route choice defined for a given destination in the network is also assigned a TCM value. By comparing TCM levels for call originator and chosen route, it is decided whether a call setup can continue or be rerouted / rejected.

To allow continued call setup, the TCM value for the call originator must be higher or equal in comparision to the chosen route.

Assignment of TCM category:
TCM category must be introduced for all calling originating call parties in the system.

Each of the defined route(s) for a certain ‘private network access code’ will have a TCM category between 0 and 7. TCM category not programmed means ‘no routing restriction, calls may always pass through.’

Calling line category translation between different signalling types:

ASB15002 users:	Proprietary services (ASB501):	QSIG standard (other-vendor PBX)
Digital extension	Digital extension	Extension
Analog extension	Analog extension	Extension
-	Terminal (Data extension)	-
Operator	Operator	Operator
Trunk line	Trunk line	Unknown
Tie line	Tie line	Unknown
-	Emergency Extension	Emergency extension
ISDN Extension	ISDN Extension	Unknown
Cordless Extension	Cordless Extension	Extension
Other facility	-	Unknown

Supplementary service - Calling/Connected Line/Name Identity

Definition

This feature is available as supplementary and proprietary service for private network calls.

It includes:

- CLIP (Calling Line Identity Presentation)
- CLIR (Calling / Connected Line Identity Restr.)
- COLP (COnnected Line identity Presentation)
- CNIP (Calling Name Identity Presentation)
- CNIR (Calling / Connected Name Identity Restr.)
- CONP (COnnected Name Identity Presentation)

The maximum length of numbers in the private numbering plan is 8 digits and for numbers in the public numbering plan 20 digits.

Operation

CLIP / CNIP

Calling Line / Name Identity Presentation enables the called party to identify the calling party.

Standard Telephone

```
10 Feb 14:40   +15°
WHITE D   8502123  C
```

If the display is too small to display both, the full number and the full name, the number always takes priority over the name. Therefore the name will be truncated. The maximum number of characters for a Name is 20.

Executive Telephone

```
10 Feb 14:40   +15°
WHITE DAVID            8502123      CALLING
directory              redial         prog
```

Operator's Console

```
10 Feb 14:40  +15°   ‖
C= 0 I= 0            ‖
 8502123     NEWCALL ‖
 WHITE DAVID     NEW ‖
directory    redial
```

CLIR / CNIR

Calling Line / Name Identity Restriction enables the calling party to prevent the presentation of its number/ name to the called party.

System telephones

There are two alternatives for outgoing calls to restrict the caller's number/name at the called party (number/ name secrecy).

Permanent mode:

The extension is configured to always restrict presentation of the caller's number/name. At call setup, CLIR / CNIR is included.

Temporary mode:

A „number/name secrecy" key can be programmed at system telephones, and the user himself/herself may decide whether or not to restrict the caller's number/ name at the called party.
This key is at the same time used for the COLR/CONR function described in the following chapter. For caller's number/name restriction at the called party, the key „number/name secrecy" has to be activated before call setup. Restriction is activated until the key is pressed again.

LED-status of the key “number/name secrecy“

Extinguished	Caller’s number/name can be presented to the called party.
Steady light	Caller’s number/name is restricted to the called party.

Independent of which mode - temporary or permanent - is activated, a subscribed COLR/CONR function (see chapter COLR/CONR) will be affected.

The following displays show an incoming call, where the caller has activated CNIR / CLIR:

Standard Telephone

```
10 Feb 14:40   +15°
DISPLAY REST      C
```

Executive Telephone

```
10 Feb 14:40   +15°
DISPLAY RESTRICTED                CALLING
directory             redial       prog
```

Operator’s Console

```
10 Feb 14:40  +15°   ‖
C= 0 I= 0            ‖
  701        NEWCALL ‖
 DISPLAY REST   NEW  ‖
directory    redial
```

COLP / CONP

COnnected Line/Name identity Presentation enables the calling party to receive identification of the connected party.

The following displays shows an incoming call, where the caller has activated COLP / CONP:

Standard Telephone

```
10 Feb 14:40    +15°
WHITE D   8502123  S
```

If the display is too small to display both,the full number and the full name, the number always takes priority over the name. Therefore the name will be truncated.

Executive Telephone

```
10 Feb 14:40   +15°
 WHITE DAVID          8502123      SPEECH
                      save       cost-on
```

Operator’s Console

```
10 Feb 14:40  +15°   ‖
C= 0 I= 0            ‖
                     ‖>8502123     SPEECH<
                     ‖>WHITE DAVID    NEW<
              save                  meter
```

COLR / CONR

COnnected Line/Name identity Restriction enables the connected party to prevent presentation of its number/ name by using the “number secrecy” key.

The following displays show an incoming call, where the caller has activated COLR / CONR:

Standard Telephone

```
10 Feb 14:40    +15˚
DISPLAY REST        S
```

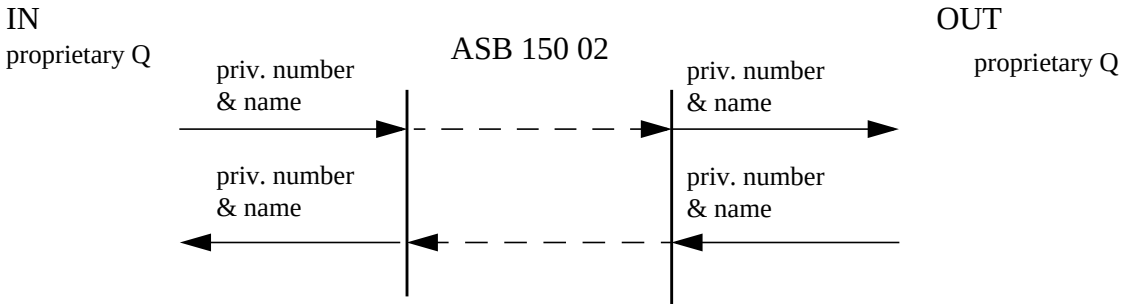
Executive Telephone

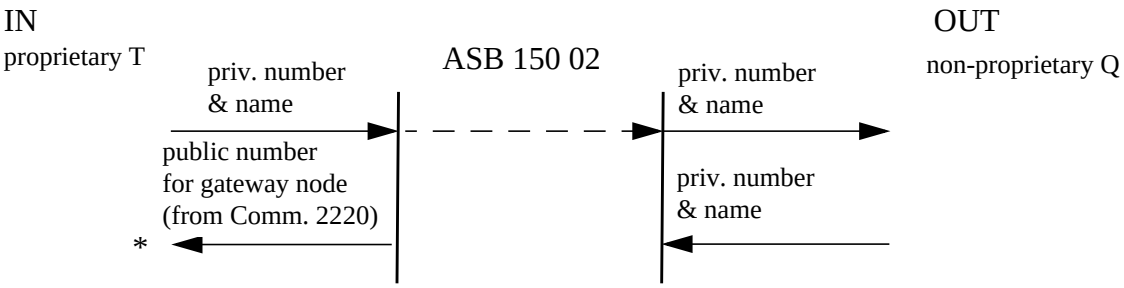
```
10 Feb 14:40   +15˚
DISPLAY RESTRICTED              SPEECH
                       save     cost-on
```

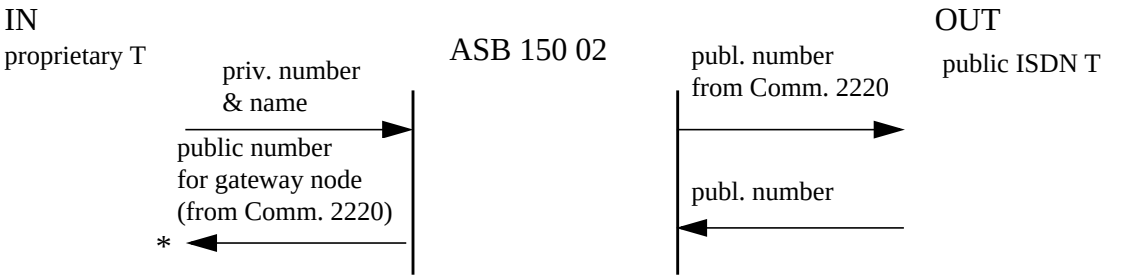
Operator’s Console

```
10 Feb 14:40  +15˚   ‖
C= 0 I= 0            ‖
                     ‖> 701        SPEECH<
                     ‖>DISPLAY REST   NEW<
            save                  meter
```

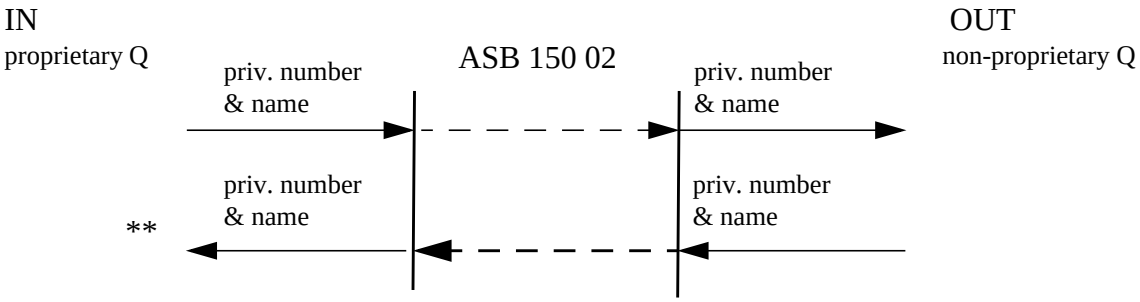
Overview - Calling/Connected Party Number transfer in gateway traffic

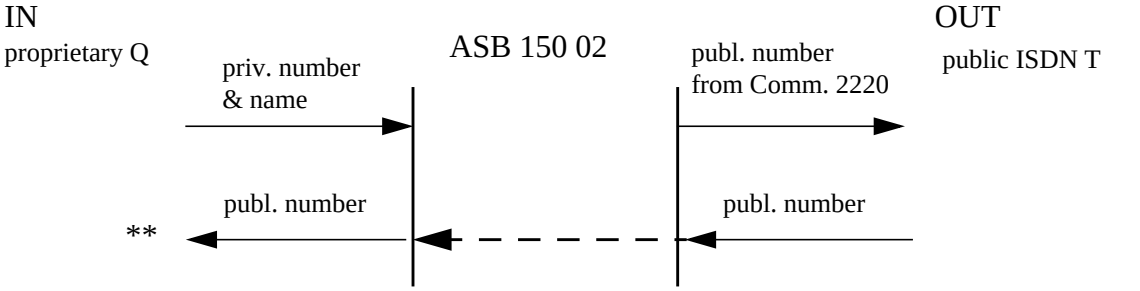




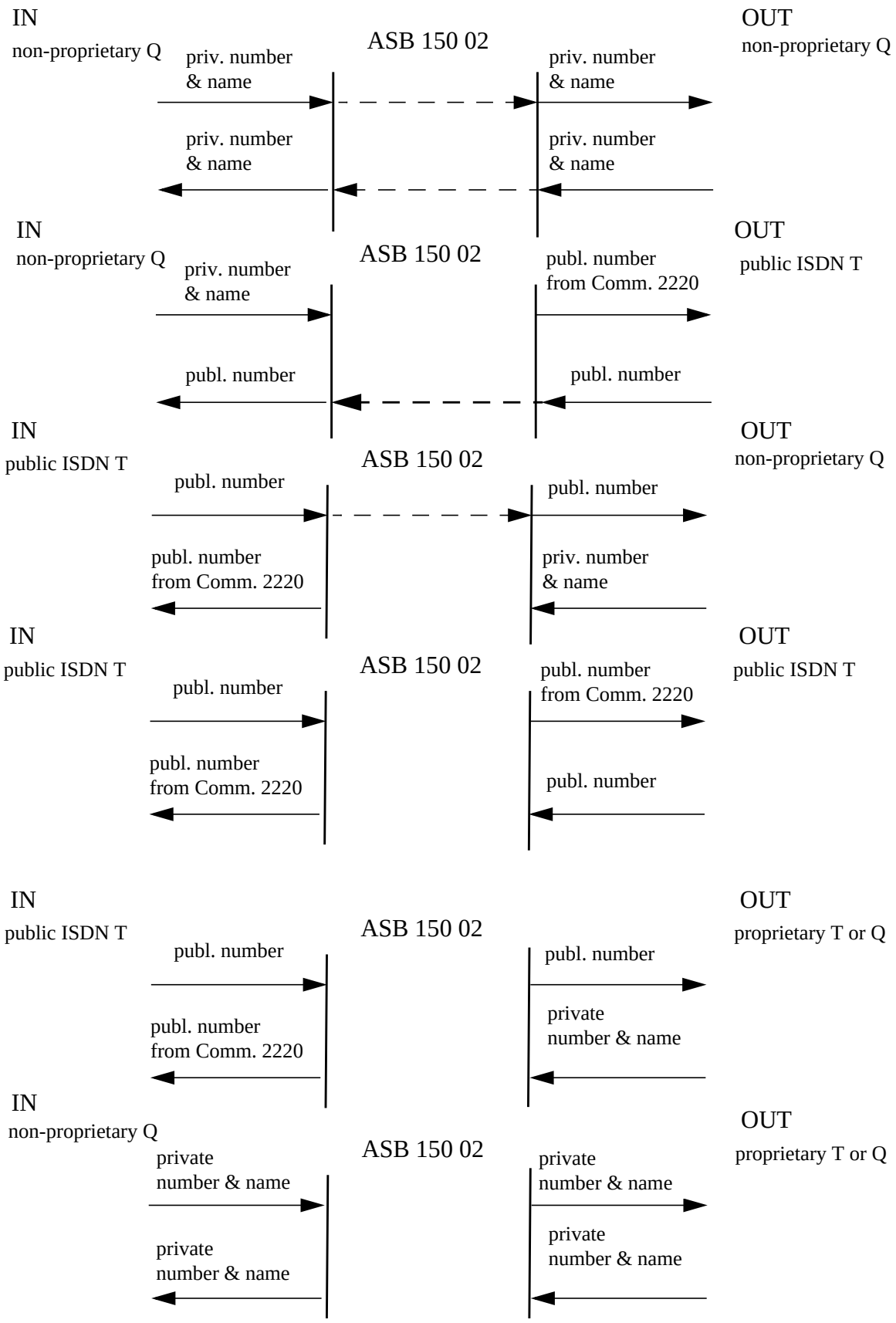


* Call continues as 'normal' public ISDN call





** Call continues as a non-proprietary call


IN
non-proprietary Q
ASB 150 02
OUT
non-proprietary Q
priv. number & name
priv. number & name
priv. number & name
priv. number & name
IN
non-proprietary Q
ASB 150 02
OUT
public ISDN T
priv. number & name
publ. number from Comm. 2220
publ. number
publ. number
IN
public ISDN T
ASB 150 02
OUT
non-proprietary Q
publ. number
publ. number
publ. number from Comm. 2220
priv. number & name
IN
public ISDN T
ASB 150 02
OUT
public ISDN T
publ. number
publ. number from Comm. 2220
publ. number from Comm. 2220
publ. number
IN
public ISDN T
ASB 150 02
OUT
proprietary T or Q
publ. number
publ. number from Comm. 2220
publ. number
private number & name
IN
non-proprietary Q
ASB 150 02
OUT
proprietary T or Q
private number & name
private number & name
private number & name
private number & name

Supplementary service - Advice of charge

Definition

The QSIG-supplementary service Advice of Charge (AOC) in ASB150 02 provides the user with charging information, received from the public network, for calls that leave the private ISDN and enter the public network.
The charging information is transferred within a private network (QSIG) as cost information by the public gateway. This cost information includes also the national dependent currency units.

For more information regarding AOC,
see ISDN facilities,
document 268/155 34-ASB 150 02 Uen.

Operation

ASB150 02 as public gateway PBX

Public network with ISDN signalling

AOC is either provided for all calls or requested from the public network on a per call basis from the public-gateway exchange (command 1914, T-interface). AOC can be requested as AOC-D or AOC-E.

Public network with 'non-ISDN' signalling

Only if call metering is provided (command 1501: Yes) on outgoing BTU_, the gateway PBX sends a positive response to an AOC request (interim, final, no preference) which is received from the private network. The conversion from pulse to costs is always done in the gateway PBX.

ASB150 02 as transit PBX

An AOC request received in a transit ASB150 02 is transferred through transparently.

Actions at a terminating PBX

An AOC request, received in a terminating exchange within the private network, is rejected with the value 'Free of Charge'.

Interaction with other features

Transfer, call extending

If the transferred-to party resides outside ASB150 02 but within the private network, the transferred-to party will not have the AOC feature active.

External call diversion

The cost of an externaly diverted private network call is booked to the diverting extension in the public gateway exchange and is sent to the call originator for display purposes in the private network.

Limitation

S-terminals are not provided with the AOC information from the private network.

The charging information received from public net, is forwarded as cost (cost amount and currency) from the public gateway ASB150 02 to the originating exchange in the private network. Only interim charging should be requested (programmed) in the originating exchange because the received AOC-information from the private network is only used for display purposes (the extension's display is updated only during call). The received costs can not be read out by the CM function and are not applicable in the CIL function.

The charging is only stated in the CIL record of the gateway exchange

Supplementary service - User-to-User Signalling

Definition

In ASB 150 02, the request of the ISDN supplementary service UUS is supported at the T- interface. At the Q-interface it is used as a proprietary service.

The UUS supplementary service enables a user (A user within a CN can be a subscriber and/ or a PBX in this context a PBX is meant) to send/receive a limited amount of information to/from another user via the signalling (D) channel in association with a call to the other user. This information is passed transparently through the network.

Use

The UUS supplementary service is used to transfer proprietary UUI (=User-to-User Information), according to the ASB 501 unique protocol via the public ISDN (VPN) or via a private QSIG network, to support additional CN (=Corporate Network) features and services between ASB 150 02 and ASB 150 02 / ASB 501.

UUS will not be used at non-proprietary CN calls (=Call between CN users, where no proprietary services are supported).

Operation

There are three different UUS supplementary services:

- Service 1: User-to-User Information (UUI) can be sent and received during the setup and clearing phase of a call within call control messages.
- Service 2: User-to-User Information (UUI) can be sent and received during the alerting phase of a call within USER INFORMATION messages.
- Service 3: User-to-User Information (UUI) can be sent and received during the active phase of a call within USER INFORMATION messages.

For a proprietary call, UUS 1 must always be subscribed. The availability of UUS 2 and / or UUS 3 increases the number and functionality of services that can be offered.

Limitations

At the Q-reference point with leased lines between the private network nodes (PBXs) the proprietary services UUS 1, 2, 3 can always be used.
However, at the T-reference point, the support of UUS 1, 2, 3, which is dependent on the public ISDN, impacts availability of the proprietary CN services mentioned on the next page.

The following table shows support of UUS 1, 2, 3 in European markets (according to information by network operators, in the beginning of 1998)

Country	UUS1	UUS2	UUS3
Albania			
Austria	x		x
Belgium	x	x	x
Bulgaria			
Croatia			
Cyprus	x	x	x
Czech Republic			
Denmark	x		x
Estonia			
Finland	x	x	x
France	x	x	x
Germany	x	x	x
Greece	x		
Hungary			
Iceland			
Ireland	x	x	x
Italia	x		
Latvia			
Lithuania			
Luxembourg	x	x	x
Macedonia			
Netherlands	x	x	x
Norway	x		x
Poland			
Portugal	x	x	x
Romania			
Slovak Republic			
Slovenia			
Spain	x	x	x
Sweden	x		
Switzerland	x		
Turkey			
United Kingdom	x	x	x

The UUS availability shown before, should be used as a first reference only - with ongoing privatisation and other impacts on different markets, the actual information on the supported UUS services should always be obtained from the local network operator.

Needed UUS services for proprietary CN features

Feature	service 1 (with ALERTING MESSAGE)	service 1 (without ALERTING MESSAGE)	service 2	service 3
Account number		X		
Call back on busy				
version 1		X	X	
version 2		X		
Call back on free				
version 1	X		X	
version 2	X			
Camp on	X			
Day/night service	X			
Call forwarding				
Diversion direct	X			
Diversion on busy	X			
Diversion on no reply		X	X	
Follow me	X			
Bypass diversion		X		
Intrusion	L	X	L	X
Message waiting indication		X		
Number and name transfer	L	X	L	L
Transfer/extending				
before answer		X	L	
after answer		X		X
Rerouting	X		X	
Transit counter		X		
Travelling class mark		X		

Agenda:
X service is required to use the CN feature
L if service is not provided: CN feature is available with limitations

Note: If a feature works with “service 1 (without Alerting message)”, the feature is - of course - also automatically available with “service 1 (with Alerting message)”.

Proprietary service - Account number

Definition

The proprietary service Account Code is based on the internal ASB 150 02 feature “Account code”, see ACCOUNT NUMBER, document 103/155 34-ASB 150 02 Uen.

Operation

Outgoing call via private network

It is possible but it is never mandatory to dial an Account Code to access a certain private trunk. If the call is a CN call, it is not checked whether the dialling of an Account number is required (no matter which trunk is accessed and no matter which Account number ACOS the trunk belongs to).

If it is a call to a proprietary PBX after an Account number was dialled and UUS service 1 is subscribed, the Account number will be sent to the private network.

The Account number is stored in the CIL-record.

Incoming and transit calls via private network

The Account number is stored in the CIL record.

Interaction with other features

Since it is never checked if an Account number is required when the call is a private network call, the features ‘Last Number Redial’, ‘CN Call Back’ and ‘CN Diversion’ (outgoing calls without manual dialling by the user) are not affected by the Account number feature.

Limitation

Within a PBX an Account number can be inserted before the external number is dialled or during the call.

Within a corporate Network an Account number can only be inserted before the external number is dialled.

Proprietary service - Call Transfer

Definition

The existing “Call Transfer” (for detailed information regarding the function, see Facility Description TRANSFER, document 485/155 34-ASB 150 02 Uen) has been modified to display the correct Calling/Connected Line/Name Indentity of the involved CN parties.

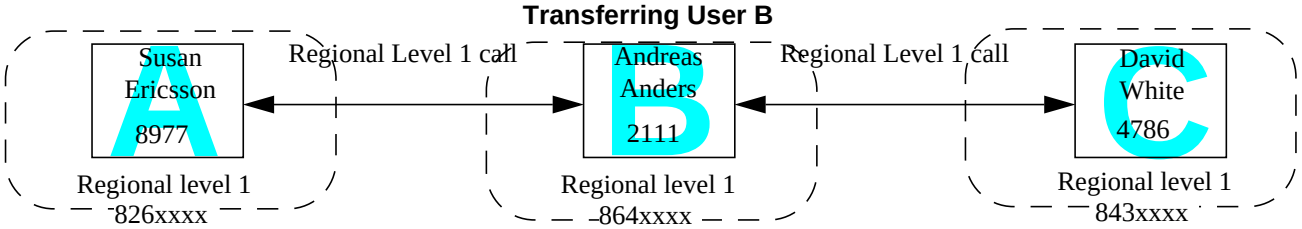
Operation

Since signalling during the alerting and active phase is required (sending of new number and name), UUS services 2 and 3 must be activated so that the proprietary CN Call Transfer can work with a full display support .
If one involved party cannot use UUS (e.g.: a user from the public ISDN), the Call Transfer is nevertheless carried out but this party is not provided with the new private number or name. That means it is possible to transfer all internal and external calls (private or public), but only external users in the private network who can use UUS 2 and/or UUS 3 are provided with the new private number and name by using the proprietary UUS protocol.

Example1

Both connections before Call Transfer (A <-> B and C <-> B) are Regional calls (TON of Calling/Connected numbers = RL1). The new connected numbers, which are sent from the transferring exchange to the new originating and the new terminating exchange after CT, have the correct prefix for display presentation at the new originator / terminator.

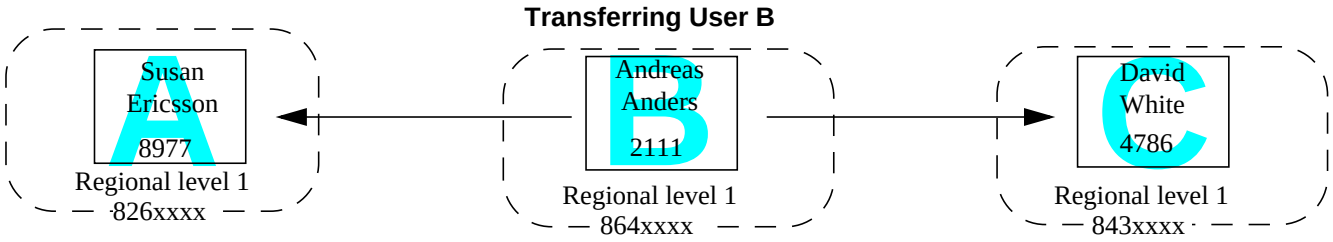
Before Call Transfer:



10 Jul 14:40 +15˚ ANDREAS ANDERS 8642111 SPEECH save cost-on	10 Jul 14:40 +15˚ DAVID WHITE 8434786 SPEECH save cost-on	10 Jul 14:40 +15˚ ANREAS ANDERS 8642111 SPEECH cost-on

After Call Transfer:

As the TONs of the received 'new' connected numbers are equal to the TONs of the already stored COL numbers, no further number conversion is required.




```
10 Jul 14:40 +15˚
DAVID WHITE 8434786   SPEECH
                save    cost-on
```

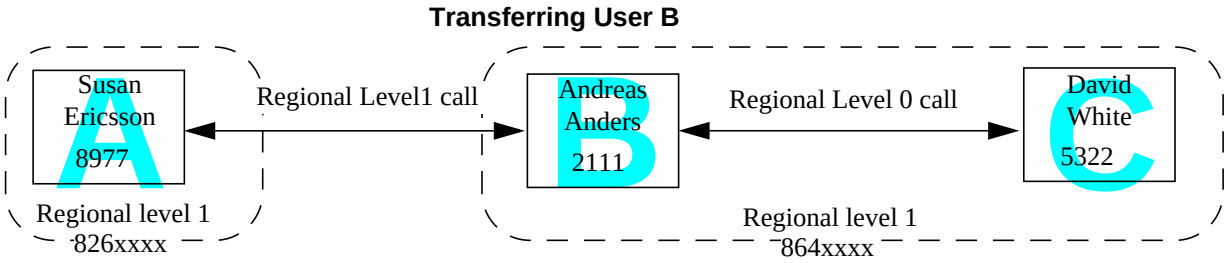
```
10 Jul 14:40 +15˚
ANDREAS ANDERS       2111
directory      redial   prog
```

```
10 Jul 14:40 +15˚
SUSAN ERICSSON 8268977 SPEECH
                          cost-on
```

Example2:

One connection before Call Transfer (A <-> B) is a Regional call (TON of Calling/Connected numbers = RL1), the other connection before Call Transfer (B <-> C) is a Local Call (TON of Calling/Connected numbers = RL0).

Before Call Transfer:



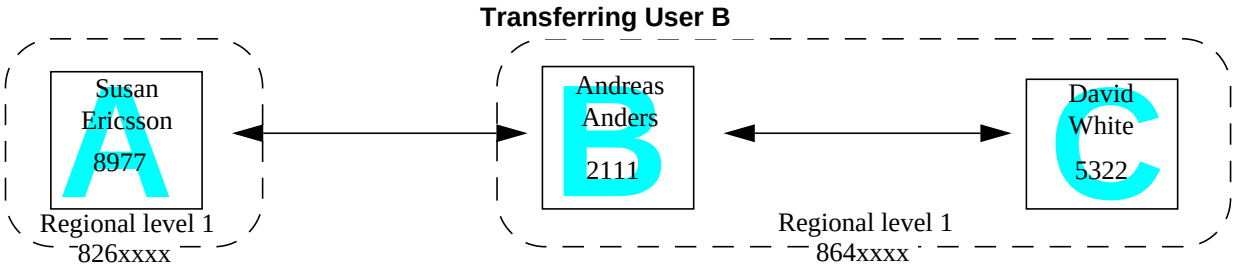

```
10 Jul 14:40 +15˚
ANDREAS ANDERS 8642111 SPEECH
                save    cost-on
```

```
10 Jul 14:40 +15˚
DAVID WHITE        5322 SPEECH
                save    cost-on
```

```
10 Jul 14:40 +15˚
ANREAS ANDERS      2111 SPEECH
                          cost-on
```

After Call Transfer:

The TONs of the received new connected number in the new originating exchange A and the new terminating exchange C differs from the TON of the stored Calling/Connected number. This indicates that the received numbers are not correctly prefixed for display presentation. The new originator sends his/her own number with correct prefix to the new terminator, and the new terminator sends his/her own number with correct prefix to the new originator.



10 Jul 14:40 +15˚ DAVID WHITE 8645322 SPEECH save cost-on	10 Jul 14:40 +15˚ ANDREAS ANDERS 2111 directory redial prog	10 Jul 14:40 +15˚ SUSAN ERICSSON 8268977 SPEECH cost-on

Proprietary service - Centralised Operator

Definition

In a stand-alone system all incoming external calls which can not be answered, due to the fact that the desired destination is busy, does not answer, is blocked or not configured, will be routed to the operator position.

This function also exists in a private network and is called Centralised Operator (COP). All systems covered by the private network are configured to reroute an unsuccessful incoming external call to a defined COP position.
The COP can be located in any proprietary PBX in the private network, with the purpose to serve all network users in the same way as users in the own dedicated PBX.

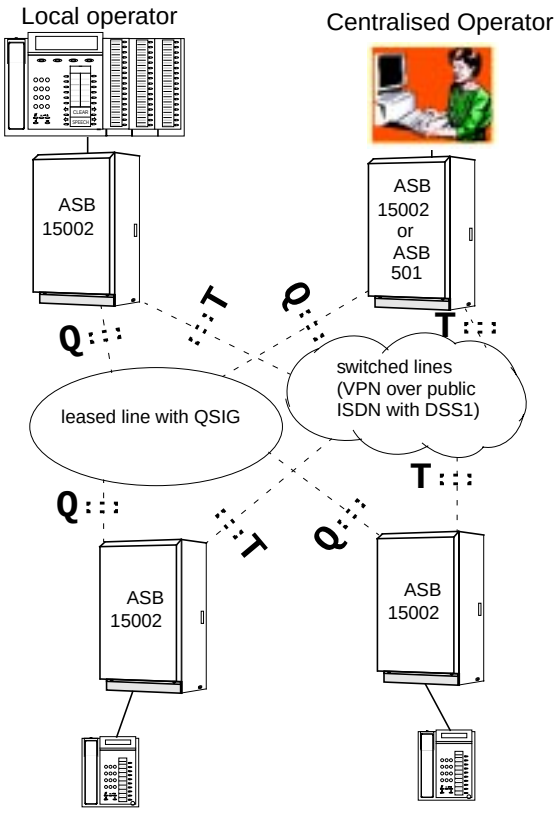
Use

The aim of the Centralised Operator is to provide the internal operator features to all users in the private network, independent of whether the Centralised Operator is located in the own PBX or in any other proprietary PBX in the private network.

In a private network Centralised Operators are used especially for these kind of configurations where you have small systems included, which do not have a dedicated operator of their own.

Operation

The Operator functionality in a private network is built up via public ISDN (VPN: Virtual Private Network) and/ or via leased lines using QSIG with proprietary signalling.



The following COP-features are supported:

- Bypass call forwarding
- Supervision of busy with recall at free (similar to the Call Back on busy function)
- Camp on
- Intrusion with forced release
- Night Service Notification (only supported when COP is located in ASB 501)
  see also chapter ” Rerouting”
- Recall at No Answer
- State Presentation
- Transfer

For more information regarding Operator functionality and especially on the difference between internal and network behavior, see OPERATOR, document 380/155 34-ASB 150 02 Uen.

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Capacity

Apart from the maximum number of three operators which can be located in ASB 150 02, there is no limitation to the number of COPs in a private network. The number of required COPs is dependent on the complexity of the whole network e.g networks which are operating over several countries will most likely have a COP in each country.

Limitation

The behavior of some of the COP features differs from that of the internal operator functionality.

These functions are:

- The manual ringing function by using the right '*Speech'* button is not available for CN calls. The desired CN destination will be called immediately after all digits have been dialled.
- At calls to a busy CN destination, the identity of the C-party is not available in the calling PBX and cannot be displayed by pressing the '*info'* button.
- In case of serial calls, the COP will not be provided with the identity of the previously transfered CN destination. Only the trunk number (of the outgoing trunk) is available for display presentation.
- By using operator supervised calls it is not possible to register the costs to the CN caller's individual call meter. To have nevertheless the possibillity to register the call to the calling party in the private network, the operator can register the call to a specified account code which is associated to the calling number.

Compared to the COP functions in ASB 501 following function is not supported in ASB 150 02

- Night Service Notification (active)

Proprietary service - Camp on

Definition

The proprietary service Camp on is based on the internal ASB 150 02 feature,
see CAMP ON INTERNAL CALLS,
document 148/155 34-ASB 150 02 Uen.

Operation

If the desired proprietary CN destination is busy, a CN user can request camp on, by dialling the facility digit defined for camp on or by pressing the appropriate soft key .

Camp on is accepted at the called user, if it permits a camp on request, otherwise the call is released.

Proprietary service - Called party number transfer via UUS1

Definition

In some countries it is required that the DDI numbers used for automatic incoming calls to extensions within a PBX are subscribed to the public network. In order to reduce the number of subscriptions as well as the resulting subscription costs, especially for trunks reserved for CN VPN traffic, it is possible to use the feature “Called party number transfer via UUS1”.

Use

When using this feature, only one number - the national significant number to reach the PBX - has to be subscribed to the public network. The DDI numbers for reaching extensions within the system will be sent as embedded proprietary information between the CN PBXs.

Operation

In order to send the DDI numbers as proprietary information, the called CN party number sent between the PBXs has to be split into two parts:

- The most significant part of the number (national destination code + subscriber number without extension number) will be sent in the call set-up message as called party number IE. This number is used to reach the destination PBX.
- The least significant part of the number (B-party’s extension number part) will be sent as a proprietary called number IE in the UUI between the CN PBXs in the network. To be able to transfer the information, the UUS 1 service is required .

Due to the fact that the extension numbers are embedded as proprietary UUI in the call set-up message, they are not transparent to the public network and do not have to be subscribed.

Furthermore, the called number’s digits in the UUI can be more than only a ‘B-party extension number’; thus a call may continue as gateway/transit call set- up to another network after the CN PBX which was first addressed has been reached.

At incoming proprietary CN calls, the called number received from the UUI will be treated as “extended” number part of the received information of the called party number IE . On the trunk line used both types of digits will be combined and stored for further number analysis in order to continue with an internal call set-up or in case of a gateway/transit call to set-up a new CN call.

To guarantee the feature functionality, both calling and called PBX must support the feature.

- A continued gateway/transit call set-up may further use this feature or continue as an ordinary call set-up, depending on the parameter settings at the outgoing side (PNR) and the interworking network.
  Both T and Q reference points, where the UUS1 service is available, can be used to carry the related information.
- Which of the dialled digits will be sent as called party number IE and/or as proprietary called number IE in the UUI will be defined in the PNR for each route choice by the number length control parameters. (Complete called party number length and Subscriber called party number length).

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Proprietary service - Intrusion

Definition

The feature CN ’Intrusion’ is based on the internal ASB 150 02 feature, see INTRUSION, document 267/155 34-ASB 150 02 Uen.

Operation

If the desired proprietary CN destination is busy, a CN user can request intrusion, by dialling the facility digit defined for Intrusion or by pressing the appropriate soft key .

Intrusion is accepted at the called user, if it permits an intrusion request, otherwise the call is released.

Limitation

The operator is always allowed to initiate intrusion on a CN destination while the extension needs to have a separate permission (command 0182).

Proprietary service - Message waiting indication

Definition

The feature CN ’Message waiting indication’ is based on the existing ’External voice mailbox’ feature, (see VOICE MAILBOX, EXTERNAL, document 521/155 34-ASB 150 02 Uen) with the difference that the external voicemail system is not connect to one’s own system, it is connected to an ASB 501 node in the corporate network.

The usage of a centralised voice mailbox is based on the proprietary CN services line identification and call diversion.

Operation

Within a coporate network, the ASB150 02 user is notified of a waiting message (as far as UUS1 is available) on the programmed ‘external voice message key’ and he/she can initiate a call to the mailbox by pressing the key.

Capacity

It is possible to use the ‘message waiting indication’ feature for just one external voice mailbox system which is connected to an CN ASB 501 node.

Proprietary service - Rerouting

Definition

The CN rerouting feature offers the possibility for an ASB 150 02 system to reroute external calls preferably to one of three possible centralised answer positions located in another CN PBX in the private network.

The reason for CN rerouting can be that the CN PBX of one‘s own, is in night switched mode and/or does not have any position to serve rerouted calls (e.g. the PBX is too small to have a dedicated operator of its own).

The centralised answer position can be:

- any extension in another CN PBX
- a COP in an ASB 150 02 system
- a COP in an ASB 501 system

Use

The CN rerouting functionality is applicable for all ASB 150 02 systems in the network, independent of whether they act as:

- gateway CN PBX
- transit CN PBX
- terminating CN PBX

Operation

Routing principle

The external incoming trunk re-directs a call in accordance with its reroute conditions (no reply, busy, not available, vacant, etc..) and referenced central answer position(s). The information about the involved parties - calling, called and rerouted- to-party identities is carried in the network during the whole CN rerouting event between the concerned CN PBXs.

Not the terminating CN PBX but ASB 150 02 systems acting as a gateway will always take care of CN rerouting, in order to archive the best possible route.

For calls originated within the private network no rerouting will ever be performed so that it will not interfere with other CN features e.g. Call-Back. This rule is independent of the command 2084 (describing whether CN calls shall be treated as internal or external calls).

CN rerouting attempts to the three possible centralised answer positions take place according to a defined priority.

1 Local reroute position day, acc. to command 1103.

2 1st CN reroute choice according to command 1110.

3 2nd CN reroute choice according to command 1111.

4 3rd CN reroute choice according to command 1112.

5 Local reroute position night, according to command 1104.

The criteria for selection is relying on the day/night switched status of each choice.
An ASB 501 COP PBX informs, the whole network periodically about its day/night switched status (central operator present/absent). According to the received status of the COP, the ASB 150 02 system marks the CN reroute choice refering to the notifying COP as valid or invalid choice. Once marked invalid, the next CN reroute choice according to the priority will automatically be chosen.
The day/night status notification functionality is neither supported by an ASB 150 02 COP system nor by any other system offering a centralised answer position. The ASB 150 02 systems in the whole network will therefore mark these kinds of CN reroute choices always as valid.

Capacity

Up to three CN reroute positions can be defined per system.

Limitation

Only one performed CN rerouting is permitted per call in order to avoid possible ‘call loops’.
The programmed central answer position must be defined by a complete unique private network number if located in another CN PBX.

Dependency of Facilities on Internal / External Handling of Private Network Calls

(see command 2084):

Feature	No influence or not applicable for network calls	CN call will be handled like a normal external call (as originally defined)	Program-mable via system command (internal or external handling)	Seperate CN feature	Comments
Abbreviated number dialling - common numbers	x				
Abbreviated number dialling - individual numbers	x				
Account number	x				
ACD-incoming call when all agents are logged out	x	x			
Alarm function	x				
Answer position for trunks	x				
Authorisation code	x				
Automated Attendant	x				
Automatic call back - busy / free extension				x	
Automatic callback - trunk / route	x				
Background music	x				
Bypass call diversion & follow-me				x	
Call-information logging (CIL) function					CIL3 to log network calls
Call Metering		x			
Call pick-up - common	x				
Call pick-up - extension group	x				
Call waiting indication	x				
Camp on - incoming external traffic		x			

Feature	No influence or not applicable for network calls	CN call will be handled like a normal external call (as originally defined)	Program-mable via system command (internal or external handling)	Seperate CN feature	Comments
Camp on - internal calls				x	
Categorisation	x				
Clock and diary	x				
Common Bell	x				
Computer Telephony Integration	x				adaptation to eight digit dir. numbers
Computer Telephony Integration for Automated Attendant	x				
Conference			x		
Connection state message	x				
Delayed automatic answer		x			
Desktop Manager	x				
DISA with password control	x				
Diversion direct				x	
Diversion on busy				x	
Diversion on no reply				x	
Doorphone	x				
External line key	x				
Fault indication	x				
Fictive number	x				
Follow me				x	
Hot line	x				
Hotel: -checked out guests -DID blocking		x			
Immediate answer			x		

Feature	No influence or not applicable for network calls	CN call will be handled like a normal external call (as originally defined)	Program-mable via system command (internal or external handling)	Seperate CN feature	Comments
Inc. calls via line 1 or line 2	x				
Incoming external calls	x				
Information		x			
Inquiry	x				
Integrated Cordless	x				
Intercom	x				
Intrusion				x	
ISDN caller list	x				
ISDN facilities	x				
Key system function	x				
Last external number redial			x		
Least cost routing	x				
Loudspeaker paging	x				
Mailbox system - procedure for storing		x			
Message system	x				
Operator - Metering call	x				
Music-on-hold	x				
Name selection	x				
Night service	x				
Operator				x	
Outgoing external calls	x				
Paging		x			
Parking for common access	x				

Feature	No influence or not applicable for network calls	CN call will be handled like a normal external call (as originally defined)	Program-mable via system command (internal or external handling)	Seperate CN feature	Comments
Private trunk line	x				
Recall following parking, camp on and transfer before answer			x		
Refer-back	x				
Reminder service	x				
Ring signals			x		
Route selection	x				
Saved external number redial			x		
Secretary function	x				
Operator - Serial call	x				
Subsystem	x				
Supervision	x				
Tandem configuration	x				
Telephone directory					PNR numbers are stored in internal directory
Tenant function	x				
Traffic group matrix	x				
Transfer	x				
Trunk (rerouting)				x	
Trunk call discrimination	x				
Voice message before answering		x			

Capacity / Limitations

On telephones with a small display it is not possible to show the full (8-digit) private network number and the presently shown textual information. In such cases, always the text, not the number, is truncated.
The following scenarios apply depending on the type of the text shown on the display:

a If the text is a calling/called user name, the name is truncated.

b If the text is a system message to the ASB150 02 user, the message is truncated.

Programming

Prerequisites:

In order to have access to the services of a given Networking package, a FECU must always be plugged- in on the CPU-D4.

For more information regarding the Networking Packages, see

INSTALLATION INSTRUCTION
EXCHANGE CABINET BDV 113 08,
document number 1531-BDV 113 08 Uen,

INSTALLATION INSTRUCTION
EXCHANGE CABINET BDV BS 101 05,
document number 1531-BDV 101 05 Uen

chapter
FEATURE ENABLING CONTROL UNIT (FECU)

and

FACILITY DESCRIPTION - GENERAL,
document number 15534-ASB 150 02 Uen
chapter FUNCTIONALITY OF ASB 150 02 WITH / WITHOUT CONNECTED FECU.

The following commands are only accessable via RASC

Q/T Link settings

1910
Basic Access mode

This command is used to specify the type of the Basic Access connection mode.
At connection to S - interface, user mode is valid.
At connection to T - interface, network mode is valid.
At connection to Q - interface, network mode (Q-reference point) is valid.

1911
Network signalling tables

The command is used to the define current network signalling protocol for the current ISDN-link.

This command defines also the standard to be used: ECMA / ETSI or ISO.

1912
Termination in ASB 150

The command is used to define the network termination for the current ISDN-link. It specifies the operation mode for layer 1,2 and 3 as well as the link synchronisation and the actions in case of call collision and error conditions. There are four choices:

Termination	*Remote*	*Synchronisation*
USER	public	slave
USER	private	slave
NETWORK L1slave	private	slave
NETWORK L1master	private	master

Connetion to a public network:
The link shall always be defined as "User in public network".

Connection to a private network:
If the opposite side is configured as network then the link shall be defined as "user in private network".

If the opposite side is configured as user then the link shall be defined as "Network - L1 master".

If the link is connected via routers (or other equipment) , that are layer 2 and layer 3 transparent but layer 1 sync master, to the oppsite side, then the link shall be set as "Network - layer 1 sync slave" (in both systems)

Valid data: User to public network
User to private
Network L1master to private
Network L1slave to private

Default data : User to public network

1947
Handling of call collisions

This command states the side (A or B) of the network which is assigned to this interface for the handling of call collisions.

In symmetrical arrangements call collisions can occur when both sides simultaneously transfer a SETUP message indicating the same B_channel.

In order to minimize call collisions, one side of the connection (side A) assign the lowest available channel number and the other side of the connection (side B) assigns the highest.

Valid data: 0,1

0 Side B

1 Side A

Default data: 1

1913
B-channel selection mode

This command states the rules for seizure of a B-channel for outgoing calls and defines whether there shall be a relation or no relation between the B-channels and the individual trunk number.

Valid data: No local channel selection
Preferred selection
Exclusive selection
- linked to trunk individual
Exclusive selection

Default data for BTUD is:
Preferred selection

Default data for BTUB/MFU is:
No local channel selection

No local channel selection
BTU-D/BTU-B/MFU leaves it to the opposite side to select a B-channel. There is no relation between the individual trunk number and the B-channel.

Preferred selection
BTU-D/BTU-B/MFU informs the opposite side which B-channel to use, it accepts, however, also another B-channel proposed by the opposite side. There is no relation between individual trunk number and B-channel.

Exclusive selection
- linked to trunk individual
BTU-D/BTU-B/MFU informs the opposite side to use a determined B-channel and does not accept any other. In this setting, there is a fixed relation between individual trunk numbers and B-channel for incoming and outgoing traffic. In conjunction with this setting it is possible to create groups of channels for defined purposes (e.g. tenant groups, ACD group).

Exclusive B-channel selection
BTU-D/BTU-B/MFU informs the opposite side to use a determined B-channel and does not accept any other. There is no relation between individual trunk number and B-channel.

1914
Subscribed charging method / Requested charging method

T-interface:
Subscribed charging method

The command is used to define the subscribed charging method for the current ISDN-link. It states if charging is subscribed by the network operator and indicates the currently subscribed charging method.

This command is used to define the requested charging method for the current ISDN-link (QSIG-protocol).

The following charging requests are available on BTU-B,MFU and BTUDP:

- AOC charging not requested.
- Interim charging requested for each call setup to the private network.
  If interim charging is provided for the current call (positive request-answer from the public gateway exchange) then charging information is received continuously during the call from private network.
- Final charging requested for each call setup to the private network.
  If final charging is provided for the current call (positive request-answer from the public gateway exchange) then charging information is received at the end of call from private network.

Valid data: not requested
interim
final

Default data: not requested

NOTE:
INTERIM charging should be requested (programmed) in the originating exchange because the received AOC-information from private network is only used for display purposes yet (the extension's display is updated only during call).

1915
Calling number allowed to network?

The command is used to define whether the calling ASB-party's line directory number is allowed to be sent to the network.

Valid data: Yes/No

No
Calling ASB-party's directory number is not sent to the network.

Yes
Calling ASB-party's directory number is sent to the network.

Default data: No

1916
Overlap receiving of called party number

NOTE: This command is only applicable for the T-interface.

The command is used to define the digit receiving method for the current ISDN-link. It states whether all incoming digits are included in the call-setup message from the network or whether the digits are received in separate messages from the network.

Valid data: Yes/No

No
No overlap digit receiving.
Overlap digit receiving procedure is not used, all digits are included in the call setup message (en-block procedure).

Yes
Overlap digit receiving.
Overlap digit receiving procedure is used, digits are received in separate messages from the network.

Default data: No

1917
MCID subscribed?

NOTE: This command is only applicable for the T-interface.

The command is used to define whether or not the Malicious Call Identification facility is subscribed for the current ISDN-link from the network operator. The command states whether an MCID facility request is allowed to be sent to the network. This is the case, if the facility is subscribed.

Valid data: Yes/No

No
MCID facility is not subscribed

Yes
MCID facility is subscribed

Default data: No

1918
Connected line presentation on

The command is used to define whether an ASB-party's line directory number may be sent to the network.

Valid data: Yes/No

No
Connected ASB-party's directory number is not sent to the network

Yes
Connected ASB-party's directory number is sent to the network

Default data: No

1919
TEI value

NOTE:This command is only applicable for the T-interface. (BTU-B / MFU)

The command is used to assign a TEI (Terminal Endpoint Identifier) value to the basic access ISDN-link (Q- / T-interface). This command is used if a non-automatic assignment is be used, i. e. a programmed TEI value. If automatic assignment is used, which means that the TEI value will be received from the network on request, no programming shall be done. The 'undefined' TEI value will inform the trunk to make a request to the network.

Valid data: FF,00-63h

FFh
automatic TEI value

00-63
valid by assigned TEI Valid data

Default data:(T): FFh = undefined, see above
(Q): 00

This command is only programmable for T-interface, for the Q-Interface there always a fixed definition.

1920
CRC4 check

NOTE:This command is only applicable for the T-interface.

The command is used to define the mode of the Cyclic Redundancy Check (CRC4) for ISDN Primary Rate Access (PRA). CRC-4 procedure for multiframe alignment and bit error monitoring is designed to supervise whether frame alignment has been lost and whether the bit error rate is within a specified range.

There are two modes of operation:

Automatic — The equipment adapts to the operation of the network.
This will mode be used in most markets.

Permanently — This mode is used if the network does not support the automatic function.

Valid data: 0-3

0 Automatic selection (by layer 1)

1 CRC4 procedure permanently enabled

2 CRC4 procedure permanently disabled

3 Default (use market-dependent parameter)

Default data: 0

1921
Ignore inband info at disconnection

This command states whether inband information, if it is available after DISCONNECT, shall be ignored and immediate call clearing shall be initiated or whether the inband information shall be transmitted to the user.

Valid data: Yes/No

No
Inband information is not ignored (the user receives the inband information).

Yes
Inband information is ignored (the call is immediately released).

Default data: Yes

NOTE:If MCID is subscribed, this command is not relevant any more.

2061
First priority link for synchronisation

2062
Second priority link for synchronisation

2063
Third priority link for synchronisation

2064
Fourth priority link for synchronisation

2065
Fifth priority link for synchronisation

These commands define which digital link is used for synchronisation of system clocks as well as the priority of working links for synchronisation in case of failure.

When there is a digital connection between at least two systems, it is essential that all systems are synchronized to the same master clock. A digital connection may consist of any type of CCS trunk, CAS trunk as well as a system with integrated cordless.

Only digital links which are programmed in USER/ SLAVE mode (see command 1912 termination in ASB 150 02) are allowed to be used for synchronisation purposes

If a system is equipped with an ICCU_ only, the synchronisation must be performed from this board position.

E.g.: A system is equipped with one BTU-D to public exchange and another BTU-D where a sub-system is connected to an ICCU_. In this case the digital trunk line to the public exchange must be set to the highest priority and the ICCU to the second priority.

General settings

2084
Type of network call handling

This command defines whether private network calls shall be handled as internal or external (tie line) calls with corresponding categories.

Valid data: Internal network call handling
External network call handling
Default data: External network call handling

Regarding the influence of this command on the system, please refer to chapter “Dependency of Facilities on Internal/External Handling of Private Network Calls” in this document!

2085
PBX protocol identifier

This command states the PBX protocol identifier for this node in the network. The protocol identifier is used to identify proprietary network calls and services.

Valid data: 0 - FFh

Default data: FEh
(default Ericsson’s PBX identity number)

Programming of the “Own location code”

5431
Create own location code

This command creates the location code of ASB 150 02.

Valid data: 1 - 4 digits

Default data: ----

NOTE: One location code can be assigned to more than one system.

5531
Delete own location code

This command deletes the location code of ASB 150 02.

5631
Alter own location code

This command alters the location code of ASB 150 02.

Programming of the Private Network Router (PNR)

5432
Create private network access number

In ASB 150 02, the private network router (PNR) is intended to be an isolated routing mechanism which will have the following main tasks:

- Routing based on dialled private network access code.
- 3 alternative route selections in case of busy trunks.
- Destination number conversion based on chosen route.

This command will create a new private network access code (PNAC).
The private network access code may be a network location code (LOC) or a co-ordinated numbering plan (CNP) directory number (node id). The PNAC must be a non-conflicting existing directory number (see command group 56).
Up to 1000 private network access numbers (1 - 4 digits, LOC or CNP number) can be programmed.

5532
Delete private network access number

This command deletes a new private network access code (PNAC).

5632
Alter private network access number

This command alters a new private network access code (PNAC).
Private Number Routing (PNR) paramaters

9101
Destination PBX

The dialled private network access number will be associated to the “type of corporate network call”, a parameter indicating whether the call setup destination is a “proprietary PBX” (ASB 150 02, ASB 501) or an “other-vendor PBX”.

If the destination is a “proprietary PBX”(ASB 150 02, ASB 501), the type of network call is a “proprietary corporate network call”.

If the destination is an “other-vendor PBX”, the type of network call is a “non-proprietary corporate network call”.

This information is used to activate / deactivate proprietary services for the started call setup.

Valid data: proprietary PBX
other-vendor PBX

Default data: proprietary PBX

9102
Call-back allowed

The command states whether automatic call-back to the private network access code may be requested.

The following command for the route will be ignored:

3302 Call-back allowed.

9103
TON / private calling

This command is used to define the Type of number (TON) for private calling / connected line identification.

Valid data: Unknown (UNK)
(LOC will be added)

Regional level 0 (RL0), “local”
(LOC will NOT be added)

Regional level 1 (RL1), “regional”
(LOC will be added)

Default data: Unknown (UNK)

9104
Call Class

National specific command for Spain (IBERCOM FUNCTION)

Default data: not specified

see also document

FACILITY DESCRIPTION - NATIONAL SPECIFIC FUNCTIONS, document number
363/155 34-ASB 150 02 Uen

9110
1st route choice

9120
2nd route choice

9130
3rd route choice

9140
4th route choice

These commands state the directory number for the 1st , 2nd, 3rd and 4th route choice, whereby the first route choice has the highest priority and the fourth the lowest.

Alternative routing will automatically take place; i.e. if all trunks in the 1st route are busy or blocked or the TCM value does not match or a network failure is encountered, the call will be sent out on the 2nd route and so on.

Valid data: 1 - 4 digits

Default data: ----

9111
TON: priv / pub called (1st route choice)

9121
TON: priv / pub called (2nd route choice)

9131
TON: priv / pub called (3rd route choice)

9141
TON: priv / pub called (4th route choice)

The command is used to define the TON (Type Of Number) of the called number.

QSIG call: If the programmed network access number corresponds to a complete destination number, the TON is RL0 or RL1, otherwise TON is UNK.

VPN call: If the programmed network access number corresponds to a complete destination number, the TON is INT, NAT or SUBS, otherwise the TON is UNK.

If the selected TON is RL0,RL1,INT,NAT or SUBS, the digits will always be sent en block. If the selected TON is UNK/PRV or UNK/PUB, the digits will be sent in overlap mode .

TON: Type Of Number.

priv. in accordance with Private Network Plan:

Regional level 1,	'regional'	(RL1)
Regional level 0,	'local'	(RL0)
Unknown		(UNK/PRV)

pub. in accordance with ISDN Network Plan:

International	(INT)
National	(NAT)
Subscriber	(SUBS)
Unknown	(UNK/PUB)

Valid data:
UNK/PRV
RL0
RL1
INT
NAT
SUBS
UNK/PUB

9112
Remove digits by using 1st route choice

9122
Remove digits by using 2nd route choice

9132
Remove digits by using 3rd route choice

9142
Remove digits by using 4th route choice

The network location access code can be modified according to the selected route / destination.
1 to 4 digits can be removed from the network location access code.

The network location access code (modified or not) is transmitted before the predigits (see command 9113) and the dialled external number.

Valid data: 0 - 4

Default data: 0

9113
Predigits for the 1st route choice

9123
Predigits for the 2nd route choice

9133
Predigits for the 3rd route choice

9143
Predigits for the 4th route choice

This command is used to define predigits for the first route choice. The predigits are transmitted after the private network access code and before the dialled external number.

Valid data: 0 - 9
(max. number of digits 16)

Default data: 0

9114
Travelling Class Mark (1st route choice)

9124
Travelling Class Mark (2nd route choice)

9134
Travelling Class Mark (3rd route choice)

9144
Travelling Class Mark (4th route choice)

The TCM feature offers the possibility to prevent the call originator (user) from routing in private and public networks.
Each originator (e.g. extensions, operators, incoming trunks) is assigned a “facility restriction level” category which is passed through the network as TCM value. In addition, each route choice defined for a given destination in the network is also assigned a TCM value. By comparing the TCM levels for call originator and chosen route, it is decided whether call setup may continue or shall be rejected.

To allow a call setup, the TCM value of the call originator must be higher than or equal to that of the chosen route.

Valid data: 0 - 7

Default data: 0 (no routing restriction)

Note: See also command 0171,
Travelling Class Mark (TCM)

9115
Complete call party number length (1st route choice)

9125
Complete call party number length (2nd route choice)

9135
Complete call party number length (3rd route choice)

9145
Complete call party number length (4th route choice)

This command can be used for ordinary number length control and, in combination with command 91x6, for the proprietary feature “Called party number transfer via UUS1”.

The command 91x5 states the amount of digits in the called destination number which must be dialled before a CN call set-up/seizure to the network is started. (In order to realize ’en block’ digit sending).

Digit dialling is supervised by a register timer in accordance with command 1403. If the timer elapses before all digits are dialled in accordance with command 91x5, call-setup is started with the digits already received, without further number length control.

Valid data: 1 - 32

Default data: not programmed = blank
(no number length control)

The command 91x5 will always override the command with the same name on trunk level (command 1317).

When command 91x5 is used in combination with command 91x6, the complete called party number is split into two parts:

- The most significant part of the number (national destination code + subscriber number without extension number) will be sent in the call set-up message as called party number IE. This number is used to reach the destination PBX.
- The least significant part of the number (B-party's extension number) will be sent as a proprietary called number IE in the UUI between the CN PBXs in the network. To be able to transfer the information, UUS 1 service is required .

The separation will be done by defining the total amount of digits of the called CN party number (command 91x5) as well as the amount of digits of the most significant part of the number (command 91x6). The difference between the two commands will be used to determine the amount of digits which are to be sent as UUI IE.

Example: At a CN VPN call, the private network number 8504711 is translated into the corresponding public number 01 81100 4711 and thereafter separated in the call set-up message as:

command 91x5 = 11 digits (complete called party number)	01 81100 4711
command 91x6 = 7 digits (most siginifcant number part)	01 81100
digits sent in UUI = 4	4711

9116
Subscriber called party number length (1st route choice)

9126
Subscriber called party number length (2nd route choice)

9136
Subscriber called party number length (3rd route choice)

9146
Subscriber called party number length (4th route choice)

This command is only used in combination with command 91x5 for the proprietary feature "Called party number transfer via UUS1", see description of previous command.

This command states the amount of digits in the subscriber number part. In this specific case the subscriber number part is the most significant number part of the complete called CN party number.

Valid data: 1 - 20

Default data: not programmed = blank (no separation of the number parts)

PNR alternative Routing

1037:
PNR route choices at incoming proprietary calls

This command states the number of PNR route choices which are allowed to be accessed by incoming proprietary calls to a PNR number. PNR alternative routing is performed, if the called destination cannot be reached via the first PNR route choice.
If no more alternative route choices are available or allowed, the call is released due to ‘congestion’ and the preceding proprietary PBX may perform alternative routing.

Valid data:	0:	1 route choice
	1:	2 route choices
	2:	3 route choices
	3:	4 route choices
Default data:	3:	4 route choices

Basic call service - Travelling Class Mark

0171
Travelling Class Mark (TCM)

This command is used to control and restrict extension/operator calls to private network routes. Each extension is assigned a TCM value.
In addition, each route choice defined for a given destination in the network is also assigned a TCM value. By comparing the TCM levels for call originator and chosen route, it is decided whether call setup may continue or shall be rejected (see commands 91x4).

To allow a call setup, the TCM value of the call originator must be higher than or equal to the chosen route.

Valid data:	0 (highest restriction level) - 7
Default data:	7 (lowest restriction level)

1035
Travelling Class Mark (TCM)

This command states the TCM for the incoming trunk. If no “Travelling Class Mark” is received from the preceding node the defined TCM value is used to decide whether or not a call is allowed to continue as a transit network call.
If the defined TCM value is lower than any of the TCM Valid data assigned to the network routes (see commands 91x4), the call setup to the network is not allowed.

Valid data:	0 - 7
Default data:	7

Basic call service - Transit Counter

2087
Transit counter

This command states the maximum amount of allowed transit call setups to prevent uncontrolled loops in the network.

Valid data: 1 - 31

Default data: 7

Calling/Connected Line/Name identity

0170
Restriction of private identity presentation

This command states whether or not the presentation of number and name in case of corporate network calls is restricted (this command is also accessible via the telephone).

Valid data: Yes/No

Default data: No

Supplementary service UUS

2072
MD110 (ASB 501) Release version of CN

This command defines the Release version of MD 110 connected to the corporate network. This is necessary because of enhancements and changes in the MD 110 proprietary UUS signalling protocol for digital networking features.

NOTE: All nodes within the private network must be configured to the same Release version, also if there is no MD110 system included in the network (e.g. only ASB 150 02 systems)!

Valid data:	0	BC 8
	1	BC 9
	2	BC 10/1
	3	BC 10/2
Default data:	0	BC 8

1940
UUS services subscription

This command states which UUS (User-to-User Signalling) services are subscribed at this interface.

Valid data:	UUS service not subscribed UUS service 1 subscribed UUS service 1 and 2 subscribed UUS service 1 and 3 subscribed UUS service 1, 2 and 3 subscribed
Default data:	T-interface: UUS service not subscribed Q-interface: UUS services 1, 2 and 3 subscribed

1941
Request of UUS service 1

NOTE: This command is only applicable for the T-interface.

This command states whether UUS (User-to-User Signalling) service 1 is requested explicitly on this interface. Explicit request means that the request is included in the FACILITY (for some markets) IE (Information Element) in the SETUP message.

Valid data:	Yes/No No not requested (implicitly) Yes explicitly requested
Default data:	No

1942
UUI length service 1

This command states the maximal UUI (User-to-user Information) length in UUS (User-to-User Signalling) service 1 supported at this interface.

Valid data:	32, 128 octets
Default data:	128 octets

1943
UUI in ALERTING?

This command states whether or not it is allowed to include UUI (User-to-User Information) in the ALERTING message at this interface.

Valid data:	No	not allowed
	Yes	allowed
Default data:	Yes	

1944
Request of UUS service 2

NOTE:This command is only applicable for the T-interface.

This command states whether UUS (User-to-User Signalling) service 2 is requested explicitly at this interface. Explicit request means that the request is included in the FACILITY (for some markets) IE (Information Element) in the SETUP message.

Valid data: Yes/No

No
not requested (implicitly)

Yes
explicitly requested

Default data: Yes

1945
Request of UUS service 3

NOTE:This command is only applicable for the T-interface.

This command states whether UUS (User-to-User Signalling) service 3 is requested explicitly on this interface.Explicit request means that the request is included in the FACILITY (for some markets) IE (Information Element) in the SETUP message.

Valid data: Yes/No

No
not requested (implicitly)

Yes
explicitly requested

Default data: Yes

Proprietary service - Call back

0177
Initiate call back to CN ?

This command defines whether an extension is allowed to request a call back from the CN.

Valid data: Yes/No

Default data: No

9001
Call setup version at network Call back

This command states which version of call setup is used at the execution of network Call back towards an ISDN network.

Version 1: A transmission path between originating and terminating PBX is established and the called party is reserved before the initiating party is called. When the initiating party answers the call, the party in the terminating PBX is called.

Version 2: The initiating party is called and when the party answers, a new call is set up to the called party.

For version 1 UUS services 1 and 2 have to be supported by the connected ISDN network, for version 2 only UUS service 1 is needed.

All nodes in a private or public network must have the same call setup version for using CN Call back.

If the the private network is an MD110 BC10 network (see command 2072), Version 1 is not available and Version 2 has to be used.

Valid data: Version 1
Version 2

Default data: Version 1

Note: All proprietary systems in the CN network, have to be configured with the same call set up version.

9002
Active time for a "CB on busy" mission in the init. PBX (T1)

This command defines the time of a network Call back on busy mission in the initiating PBX.
If this timer expires, the PBX initiates the cancellation of the Call back service.
The timer can be programmed in steps of 5 minutes.
The same value must be programmed in all PBXs in the CN.

Valid data: 0005 - 0855 (hhmm).

Default data: 120 min.

NOTE:The programmed value must be reduced by 5 minutes compared tothe programmed value stated in command 9004 !

9003
Active time for a "CB on free" mission in the init. PBX (T1)

This command defines the time of a network Call back on free mission in the initiating PBX.
If this timer expires the PBX initiates the cancellation of the Call back service.
The timer can be programmed in steps of 5 minutes.
The same value must be programmed in all PBXs in the CN.

Valid data: 0005 - 0855 (hhmm)

Default data: 120 min.

NOTE:The programmed value must be reduced by 5 minutes compared tothe programmed value stated in command 9005 !

9004
Active time for a "CB on busy" mission in the superv. PBX (T2)

This command defines the time of a network Call back on busy mission in the supervised PBX.
If this timer expires, the PBX initiates the cancellation of the Call back service.
The timer can be programmed in steps of 5 minutes.
The same value must be programmed in all CN PBXs

Valid data: 0005 - 0855 (hhmm)

Default data: 125 min.

NOTE:The programmed value must be at least 5 minutes higher than the programmed value stated in command 9002 !

9005
Active time for a “Call back on free” mission in the supervised PBX (T1)

This command defines the time of a network Call back on free mission in the supervised PBX.

If this timer expires, the PBX initiates the cancellation of the Call back service.

The timer can be programmed in steps of 5 minutes.
The same value must be programmed in all PBXs in the CN.

Valid data: 0005 - 0855 (hhmm)

Default data: 125 min.

NOTE:The programmed value must be at least 5 minutes higher than the programmed value stated in command 9003 !

9006
Maximal ringing time at the initiating extension for Call back calls

This command specifies the time during which the initiating extension is ringing at network Call back calls.

If this timer expires the PBX initiates the cancellation of the Call back service.
The same value must be programmed in all PBXs in the CN.

Valid data: 1 - 255 sec.

Default data: 8 sec.

Proprietary service - Call diversion

0176
Call diversion to a CN number allowed

The command defines whether an extension is allowed to activate call diversion to corporate network number.

Valid data: Yes/No

Default data: No

Proprietary service - Camp on

0108
Camp on allowed?

This command defines whether or not internal callers or proprietary CN callers are allowed to initiate camp on to the extension.

Valid data: Yes/No

Default data: Yes

Proprietary service - Intrusion

0182
Initiate of network intrusion allowed?

This command defines whether or not the extension is allowed to initiate intrusion on a busy CN destination.

Note: This command is independent of the permission to initiate Intrusion in the local exchange.

Valid data: Yes/No

Default data: No

Proprietary service - Message Waiting Indication

2023
External voice mail number

Number to call the external voice mail system.

An external voice mail system can be connected to ASB 150 02 via an analogue extension board or via proprietary networking functionality. A programmable key can be defined for the external voice mail function. The LED associated with the key will indicate a message to the extension.

Press the key to listen to the message. By pressing the key a call is made to the voice mail system. This command is used to define the number to be called.

If the external voice mail system is connected via an analogue extension board, the number to be called is the number of the analogue extension connecting the voice mail system. If the external voice mail system is connected via more than one extension line, a PBX-group must be created. The PBX-group has to be programmed to contain all extension lines used to connect the voice mail system, and this command should specify the number of the PBX-group.

If the external voice mail system is connected via a proprietary private network, the number to be called is the private network number of the external voice mail system located in another PBX.

Valid data: up to 8 digits

Default data: -

2071
ISID of external voice mailbox

This command defines the Information System Identity (ISID) of the external mailbox system, which is located in an ASB 501 PBX.

Valid data: 0 - 99

Default data: FFh (not programmed)

Proprietary service - Rerouting

1110
1st choice CN reroute position

1111
2nd choice CN reroute position

1112
3rd choice CN reroute position

The command is used to determine the 1st / 2nd / 3rd choice (of three possible) CN reroute positions for the trunk.

The programmable number refers to one of three system-defined central answer positions. The value of the programmed reference number(s) defines also how CN rerouting is handled:

- If no reference numbers are programmed at all for a trunk this means “CN rerouting not allowed or not available”.
- Programmed value 0 means that the CN reroute destination number(s) are defined in the gateway PBX from where the rerouting will be executed.
- Programmed Valid data 1 - 3 mean that the system defined central answer position numbers, in accordance with commands 2077 - 2079, are used for the CN rerouting.

Three attempts are allowed in order to reach one of the 1st, 2nd and 3rd choice central answer positions.

Valid data: empty, 0, 1 - 3

Default data: empty

The order of priority for local and CN rerouting is:

a Local rerouting at day switched system

b 1st choice CN rerouting

c 2nd choice CN rerouting

d 3rd choice CN rerouting

e Local rerouting at night switched system

2077
1st central answer position

2078
2nd central answer position

2079
3rd central answer position

The command is used to determine the 1st / 2nd / 3rd choice (of three possible) central answer position for the system in a corporate network.

The programmable numbers can be either :

- CN reroute number (1-8 digits) when the answer position is located in another PBX. The programmed number must be the complete unique network number.
- Internal directory number (1-4 digits) when the answer position is located within the PBX of one‘s own. The call handling process will be the same as for local rerouting.

Valid data: empty, 1 - 8

Default data: empty

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
		365/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved	Kontr/Checked	Datum/Date	Rev / Tillhör/Referens-File/Reference
		99-07-15	A

Equipment

BTU-B_ or MFU or BTU-D with ISDN PROM set.

A FECU must be connected to the CPU-D4.

For more information regarding
the Feature Enabling Control Unit,
see FACILITY DESCRIPTION - GENERAL,
document 155 34-ASB 150 02 Uen.

NIGHT SERVICE

Definition

Night service denotes a different pattern for incoming trunk (external) line traffic than that normally applicable.

There are three types of night service:

- Night service - system
- Night service - trunk (external) line group
- Night service - ACD-group(s)
  (see document 105/155 34-ASB 150 02 Uen)

Use

System night service is employed when for example the company closes for the day and it is desired that all calls be directed to extension users still working e.g. doorkeeper or watchman.

It is advisable to assign the night service function to a name selection key that possesses a lamp.

System night service also affects TCD-(Trunk Call Discrimination) analysis whereby the extension's night service category (COS) applies.

Night service for a trunk line group is used when the company consists of various departments with own trunks that can be night-switched groupwise.

Night service for ACD-group(s) is used to distribute incoming ACD calls after office hours
(see ACD-GROUPS,
document 105/155 34-ASB 150 02 Uen).

The function can also be utilised when several companies share the same PBX (Tenant-function).

Operation

Night service - system

- Enter night service command ***8#**

alternatively

- Press programmed night service key.
  Night service lamp lights and glows steadily.
  Verification tone is heard

Day service

- Enter night service command ***8#**

alternatively

- Press programmed night service key.
  Night service lamp extinguishes.
  Verification tone is heard

Night service-trunk line group

- Enter command for trunk line group 1 - 8 to be night switched ***81#** - ***88#**

Day service

- Repeat the above mentioned precedure to switch onto day service the night-switched trunk line group.

Activation of functions for night-switched trunk line groups

As night switching of trunk line groups only affects the answering position, it is necessary to enter a special command to activate functions that normally are activated for system night service.

An example of this is night service category for TCD-analysis.

To activate the already night-switched trunk line groups:

- Enter ***80#**

Capacity

For night service each trunk can be assigned an individual answering position and a divertee answering position.

The trunks can be divided in up to eight groups with an optional number of members per group.

Limitations

Night service can be activated only by the or those extensions that possess a facility category which includes night service.

Programming

Programming of answering positions

Each trunk is to be assigned both an individual answering position and alternative answering position for night service.

1102
Individual answering position night

```
10 Jul  14:40  +15°
ANSWERING POS.NIGHT   1102 xxxx     zzzz
  backward  forward     c/i       return
```

xxxx	Enter trunk's directory number
zzzz	Enter answering position's directory number

1104
Alternative answering position night

To be programmed as individual answering position. See above.

1019
Night switching trunk group

It can be stated for every trunk line to which night service connection group it belongs.

Authorisation for night switching

Authorisation to night switch the system or individual groups is determined by the extension's facility category. In respect of the night switching, the following commands are affected:

3001
Day/night initiation

Gives general permission to night switch via command ***8#**.

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
		362/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved	Kontr/Checked	Datum/Date	Rev / Tillhör/Referens-File/Reference
		98-01-27	B

3022
Day/night system

For night switching of all groups via command ***80#**.

3023 - 3030
Day/night trunk group 1-8

For night switching of individual groups via commands ***81#** -- ***88#**.

0101
Assign facility category

Those extensions that are to be permitted to night-switch are assigned a facility category (COS) that includes night service

```
10 Jul 14:40   +15°
FACILITY COS          0101 xxxx       zz
 backward  forward     c/i      return
```

xxxx	Enter extension's directory number
zz	Enter relevant facility category

If an extension user wishes to designate a particular key for night service he/she programs a free name selection key.

See also NAME SELECTION,
document 360/155 34-ASB 150 02 Uen.

Equipment

None.

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Dokansv/Godkänd - Doc respons/Approved / Kontr/Checked		Datum/Date / Rev	Tillhör/Referens-File/Reference
SEA/EBBMP		99-07-15 F	ASB 150 02
		Database reference	
		380.fm	

Operator

Operator's Console..... 2

Definition 2
Use 2
Operation 4
Capacity 21
Limitations 21
Programming 21
Equipment 27

PC Operator Version 1.x..... 28

Definition 28
Use 28
Operation 29
Capacity / Limitation 31
Programming 31
Equipment 32

Operator Suite 3.4..... 33

Definition 33
Use 33
Operation 35
Capacity 36
Limitations 36
Programming 36
Equipment 37

Operator's Console

Definition

The Operator is a special instrument which will be used as central answering position, information centre (e.g. to place calls for external callers who don't know the extension number of the desired person) or as reroute position, if the desired extensions are busy or do not answer.
All incoming calls to an Operator, external and internal, are queued and presented to up to three Operators in the order of their arrival.
The Operator can decide whether incoming calls shall be connected automatically, the answer key shall be pressed or he/she has to answer manually with hook.

The answer function can be combined with an automatic voice answer from a voice memory board for incoming calls.

DBC 214

- Standard keyset
- 3 permanent function keys
- 15 permanent function keys with lamp
- up to 71 programmable keys
- 5*40 character alphanumerical display
- 4 menu keys
- Loudspeaker
- Group listening
- Full hands-free operation
- Up to 4 DSS can be connected

Use

Common queue to the Operators

All Operators answer calls from a common queue.

The queue barometer provides information on how many calls are waiting in the common queue.

Individual queues

If the calls are routed to the individual directory numbers of the Operator Consoles, these calls can only be answered by the respective individual Operator.

The queue barometer shows the number of calls waiting in the individual queue.

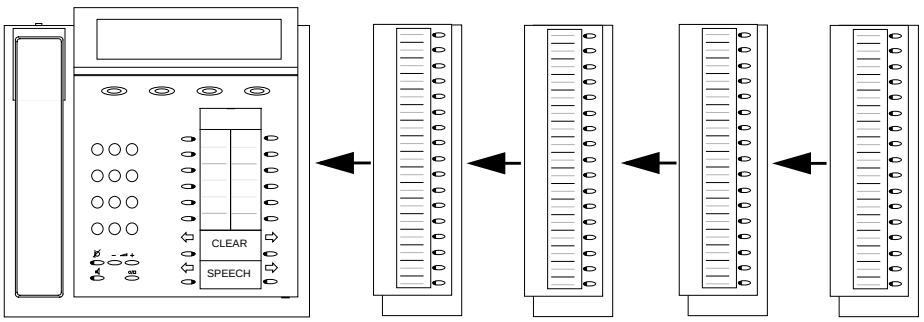
The function can be utilised if ASB 150 02 is shared by several companies (Tenant function) or if certain types of calls are to be answered by a certain Operator.

An already answered call will always be presented in the individual queue, that is assigned to the Operator who originally answered the call.

Information to the Operators

On an incoming call each Operator receives information stating which trunk is calling.

If the trunks have been assigned names, the Operator can supply the correct answer, even if the Operator is answering calls to several different companies.



Note: Up to 4 KEY PANELS may be connected to the OPERATOR's Console.
Each KEY PANEL has 17 programmable keys with lamps. Each KEY PANEL can be snapped on to the OPERATOR's Console. A separate power supply for the key panels DBY 409 02 is necessary. The key panels DBY 409 02 have to be used for key panel 3&4, which must not be mixed with the key panels DBY 409 01 !
For more information concerning the key panels, see document 1531-DBC214 01 Uen.

Voice Message before answer

If external callers are routed to the Operator they will receive voice message before answer (if programmed). Then they will hear the Operator queue announcement (if programmed and if all Operators are busy) and then Music on Hold or Silence (see also chapter "Voice answer if all Operators are busy" below). If no announcements are programmed, the caller will hear the ringing tone.

Voice answer if all Operators are busy

It is possible to give external callers a queue announcement if all Operators are busy.

The call will then receive an automatic answer. The caller hears a greeting that informs him that there is a queue.
When the voice message ends, the call is queued and the caller hears music-on-hold, if programmed, otherwise there will be silence.

Greeting

When the Operator answers the external call, an individual greeting announcement can be supplied (programmed). This spares operators from having to say the same greeting for each incoming call.

If the greeting announcement has been programmed, on depression of the answer key the caller will hear a prerecorded answer, whereafter the Operator can speak to the caller.

Automatic answer

The Operator can decide whether incoming calls shall be connected automatically, the answer key shall be pressed or he/she has to answer manually with hook (=default value).
Every Operator can program the Operator Console so that the calls are answered automatically, that is the Operator does not have to press a key.

The call is then presented automatically as soon as the Operator ends the preceding call.
This feature is normally used in conjunction with a headphone set.
This function is temporary deactivated if a call is on Loop, Monitor or OP-Hold.

Automatic extending

The Operator's Console can be programmed so that calls to free extensions are automatically extended after the number has been dialled.

If the dialled number is busy or unassigned (vacant), there will be no automatic extending.

Queue indication to Operator

The Operator can, in addition to the visual queue indication on the display, also receive a short or normal ring signal when a call is queued.

Operator Hold (Parking key)

A key for parking shall be programmed on each Operator Console.

Several calls can be parked at this function.

The Operator can reaccess a (any) call at any time.

A lamp that glows steadily indicates that there are parked calls.

Programmable alternative answer position for the Operator

When an Operator activates off duty, it is possible to define whether the incoming calls to the Operator queue shall be directed to the default alternative answer position or to a free programmable one. This new alternative answer position will be valid only for the ongoing off-duty activity.

If the off-duty state is automatically activated, because of timeout, all incoming calls to the Operator queue will be rerouted to the default alternative answer position.

Operation

General

Depending on the configuration of the ASB 150 02 system, the operator can act in two different ways:

- as operator of a stand alone system
- as a centralised operator in a Corporate Network (CN), which is based on proprietary UUS signalling (see NETWORKING, document 380/155 34-ASB 150 02 Uen), serving all users in the network as well as the users in their own system.

ASB 150 02 supports three different Operator's Consoles:

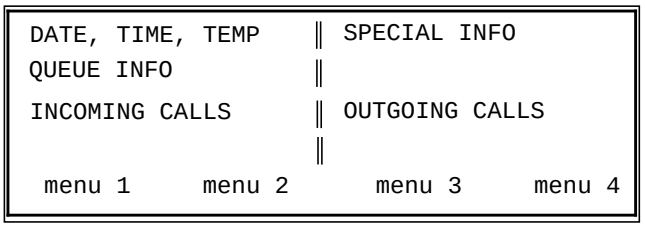
- DBC 754
- DBC 663
- DBC 214 + up to 4 key panels

Regarding the old type of Operator's Consoles, see dedicated User Guides:

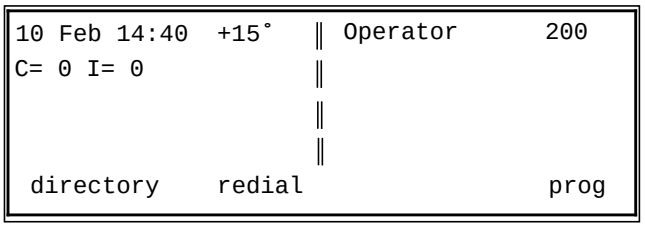
- DBC 754:EN/LZT 102 2052
- DBC 663:EN/LZTBS 102 017

The following procedures are related to the DBC 214 Operator's Console:

The display consists of 5 lines, with space for 40 characters on each line. The fields in the display consist of the following information.



When the phone is in idle state, the upper line shows date, time, temperature, name and extension number. The second line presents queue (Common and Individual) information. The lower line presents the available menu key functions.



The status information of incoming and outgoing calls is sometimes given as an abbreviation and sometimes as complete word:

Status information values

- BLOCKED — Extension or Function blocked
- BUSY 2 — Extension busy (queue situation is displayed)
- CONGESTION — Congestion in the system
- C= 0 — Number of calls waiting in the common queue
- DIVERSION, DIV — Call redirected
- FREE 1 *) — Called internal extension is free on Line 1
- FREE 2 *) — Called internal extension is busy on Line 1, but free on Line 2
- I= 0 — Number of calls waiting in the individual queue
- INCOMPLETE — The number was incomplete
- INFO& — The called extension has text info stored
- INFO% — The called extension has voice info stored
- INQUIRY, INQ — Inquiry call
- INTRUSION — Intrusion into ongoing call
- METER, MET — Call charging
- NEW CALL, NEW — Call not previously answered
- RECALL — Recall of previously answered call
- RERO — An external incoming call was rerouted to the Operator
- RESTRICTED, REST — Restricted extension, calls cannot be handled

(continued on the next page)

*) This status information is not supported for a centralised operator in a corporate network calling a corporate network number.

Status information values (continued)

- RING — Ring to announce call
- SERIAL, SER — Serial calls
- SPEECH — Call answered
- TRF — Transferred call
- VACANT, NU — No assigned number
- +15˚^ — Indicates temperature and tendency (up or down),if your telephone system is equipped with optional temperature sensor.

Attendance

Offduty

When offduty is activated, all incoming external calls to the Operator queue will be routed to an alternative answering position.

Offduty	Press to activate / deactivate

If the lamp is on, the console is off duty.

Programmable alternative answer position for the Operator

The function "Programmable Alternative Answer Position for the Operator" affects the procedure after pressing the off-duty key or after the automatic offduty function was activated.

Condition 1
One Operator is active:

After pressing the offduty-key the Operator can change the default answer position. The default answer position via RASC will be shown on the display. (If the default answer position is not programmed via RASC, the display will show " ???? " instead of the answer position.)

```
10 Feb 14:40  +15°   ‖OFFDUTY ACTIVATED
C= 0 I= 0            ‖ANSW.ADDR:  XXXXXXXX
                     ‖
                     ‖
 directory   redial     temp        prog
```

XXXXXXXX answer position
F3 (temp) change the default answer position

Press ENTER to confirm the alternative answer position.

If the Operator does not press the ENTER-key, the function will automatically be deactivated after time-out. This timeout will be the same as used in the programming mode. After timeout, the default answer position is again shown on the display.

The new alternative answer position for the Operator will be valid only for the ongoing activity. If offduty is activated again, the default answer position will be active again.

Condition 2
More than one Operator is active:

After pressing the off-duty key the Operator gets the display information that another Operator is active. All calls will be diverted to the active Operator. In this case it is not possible to change the answer position.

```
10 Feb 14:40  +15°   ‖OFFDUTY ACTIVATED
C= 0 I= 0            ‖OTHER OP ACTIVE
                     ‖
                     ‖
  directory   redial                  prog
```

The following numbers can be programmed by the Operator as alternative answering position:

- Automated Attendant
- Common abbreviated number
- Common mailbox
- Corporate network number
- Extension number
- Fictive number
- Group - (PBX) hunting number
- Paging number
- Operator number
- Voice answer number

Night Switch

This function switches the whole system to the night switch mode. The night switch mode routes all incoming external calls to a defined night answering position, e.g. an answering machine, and changes the Trunk Call Discrimination table of all extensions.

Night	Press to activate / deactivate (pre-programmed)

If the lamp is on, night switch is active.

For more information,
see NIGHT SERVICE,
document 362/155 34-ASB 150 02 Uen.

Operator announcement

When playing the individual greeting announcement, the Operator's Console's default value is "silence". As soon as the announcement is finished, the Operator gets a beep-tone as an indication.

The Operator may listen to the caller during the greeting announcement, if this has been programmed via RASC.

Incoming calls

Internal and external calls

A ringing signal indicates an incoming call.

○/□	Press

OR (if programmed)

Lift the handset

The Operator has speech connection with the caller via the loudspeaker and microphone, or via the handset / headset (if installed).

Clear	Press to end the call

Outgoing calls (general)

Internal calls

Dial a directory number or press a pre-programmed key. The display shows the actual status of the dialled number (see Status information values)

Speech	Press to set up the call

The Speech button on the right to set up the call is only required, if an extension, the mailbox system or an Auttomated Attendant is called. For all other types of directory numbers the call will be set up automatically

Clear	Press to end the call

External calls

External calls are automatically set up by dialling the digit(s) for the trunk route access number, by pressing a pre-programmed external line key and then dialling the external number, or by dialling a common abbreviated number.

Corporate network calls

Corporate network calls are automatically set up by dialling the corporate network number.

Last external number redial

	Press to redial the last dialled external number

For more information,
see LAST EXTERNAL NUMBER REDIAL,
document 320/155 34-ASB 150 02 Uen.

Save external number redial

`save`	Press before finishing a call (see display)

`redial`	Press to redial the saved number (see display)

For more information,
see SAVED EXTERNAL NUMBER REDIAL,
document 460/155 34-ASB 150 02 Uen.

Outgoing calls to a busy extension

Busy extension

If the desired extension is busy, the operator can initiate a call back:

Notify	Press

Loop 1	Press any free loop key The key lamp shows steady light.

A ringing signal and the flashing loop key lamp indicate that the desired extension is free.

Loop 1	Press again

The Operator has to answer within thirty seconds, otherwise the call will be released automatically.

Speech	Press to call the extension *)

*) This step is not necessary when calling a CN destination.

An operator can only have one active 'call back' supervision at a time.

Note:
If an operator calls a busy extension in the own system, then called extension will not be informed that a further call is waiting.

If an operator calls a busy CN extension, the call will always be camped on, and the called destination will receive a call waiting tone

Transfering to a busy extension

An incoming caller would like to be transferred to a specific extension, but the called extension is busy:

Option 1: Transfer the call directly to the busy extension

`info`	Press and hold (see display) The conversation partner of the busy extension is shown on the display *)

	Press to place the call The call is camped on to the busy extension, which will receive a call waiting tone.

After transfering ther call the operator is no longer involved in the call.

*) This function is not available for a centralised operator in a corporate network when calling a corporate network number.

Option 2: Transfer the call when the busy extension becomes free again.

This option is normally only used when the operator wants to announce the call before transfering.

Notify	Press

Loop 1	Press any free loop key The call is now in camped on state, the busy extension will receive a call waiting tone.

When the extension becomes free, this will be indicated by a a ringing signal and a flashing loop key.

Loop 1	Press

The Operator has to answer within eight seconds, otherwise the call will be placed automatically.

Speech	Press to call the extension *)

*) This step is not necessary when calling a CN destination.

	Press to place the call

Intrusion and forced release

If a called extension is busy, the Operator can intrude ongoing calls and give new calls priority. In order to intrude to an ongoing conversion, the B and C party must be configured to allow an intrusion request.

`info`	Press and hold (see display) The conversation partner of the busy extension is shown on the display **)

**) This function is not available for a centralised operator in a corporate network when calling a corporate network number.

Speech	Press to intrude

To release the C-party

Speech	Press again to disconnect the person talking to the extension
Speech	Press to inform the caller
	Press to place the call

Busy external line/ route

If no external line is available for a call:

Option 1: Initiate a call back

Notify	Press

Loop 1	Press any free loop key The key lamp shows steady light.

A ringing signal and the flashing loop key lamp indicates that an external line is free.

Loop 1	Press again

External dial tone. Continue making the external call.

Option 2: Intrude on a busy external line

`info`	Press and hold (see display) The conversation partner of the busy external line is shown on the display

Speech	Press to intrude Inform the external line

Speech	Press again to disconnect the person talking on the external line

Supervise long distance calls

An external number has been dialled and the Operator wants to handle new calls while waiting for an answer.

Monitor	Press The key lamp shows steady light.

The Operator can listen to the monitored party, but the monitored party does not hear anything.

When the long distance call is answered:

Monitor	Press again The key lamp extinguishes, speech connection

During calls

Transfer

The Operator wants to transfer an incoming call to an extension.

Dial the extension number, dial an internal group number or press a pre-programmed key, then transfer by pressing the -key or replacing the handset (depending on the individual programming).

(For general information, see "TRANSFER, document 485/155 34-ASB 150 02 Uen)

Operator hold

Several incoming calls can be put on hold using "Operator hold".

Hold	Press (pre-programmed) The call is now put on hold. The key lamp shows a steady light.

When the Operator wants to take one of the calls on hold again, he/she must not have any ongoing calls.

Hold	Press (pre-programmed) The oldest call on hold is shown on the display.

Speech	Press to retake

Individual hold

Incoming calls can be put on hold for retake.

Loop 1	Press any free loop key The call is now put on hold. The key lamp shows steady light.

Loop 1	Press again The loop key lamp extinguishes.

Speech	Press to retake

Serial calls

The external caller wants to speak to several extensions in a certain order.

`serial`	Press (see display) and call the first party

	Press to place the call

A serial call can not be transferred by the extension, but will be rerouted back to the operator, if the extension terminates the call. When the call is routed back to the operator, the identity of the previous connected party will be provided. If a serial call is rerouted to the centralised operator in CN, the identy of the previously connected party will not be provided.

Recall after the first conversation:

The call should be placed to the next extension in the normal way. This procedure can be repeated until there is only one requested extension left.

Before the last call in the serial call:

`serial`	Press (see display) and call the last party

	Press to place the call

After the last conversation the serial call is terminated.

Group listening

There is an ongoing conversation via the handset:

	Press to switch the loudspeaker on / off.

When the lamp is on, the loudspeaker monitors the call.

From handset to handsfree

There is an ongoing conversation via the handset:

	Press to switch the loudspeaker on

Replace the handset to enable handsfree conversation.

Clear	Press to end the call

From handsfree to handset

There is an ongoing handsfree conversation. By simply lifting the handset the mode is changed from "handsfree mode" to "handset mode".

Mute

There is an ongoing handsfree conversation. Press the Mute-key to switch the Microphone on or off. When the lamp is on, the caller cannot hear the conversation in the room of the called person.

Conference

There is an ongoing conversation.
The operator dials the extension number of the third party.

Speech	Press to call the third party

The third party answers.

`conf`	Press (see display) to establish a three-party conference

For more information, see CONFERENCE, document 154/155 34-ASB 150 02 Uen

Call ordering

Dial tone ordering

An extension calls and orders an external line with dial tone. The caller remains on the line. Dial the trunk route no. or press a pre-programmed external line key.

	Press to place the call

Call ordering

An extension calls and orders an external or internal party. The caller does not remain on the line after ordering. The requested party is called and is asked to remain on the line.

Speech	Press

The extension that has ordered the party is called.

Speech	Press to call the extension

	Press to place the call

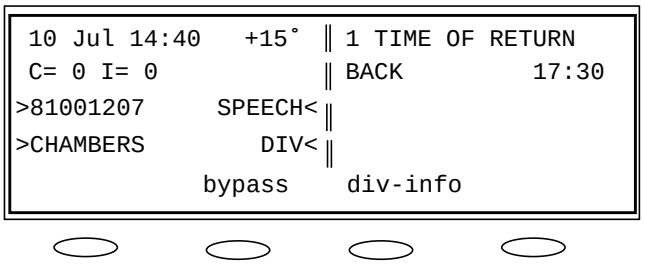
Diversion

Receive information for diverted calls

The Operator has answered a call that is diverted to him/her. Information is registered on the extension.

`div-info`	Press (see display)

The information is shown to inform the calling party.



Bypass Diversion

Bypass Diversion is useful if an urgent call has to be placed to an extension that is diverted.

`bypass`	Press (see display) to bypass the diversion and call the extension

Change diversion address for another extension

An Operator has the possibility to change the diversion address for another extension.

✳ 2 1 ✳	Press and dial the extension number
✳	Press and dial the new extension number
#	Press
Clear	Press to finish the procedure

Information

see "INFORMATION, document 263/155 34-ASB 150 02 Uen

Messages

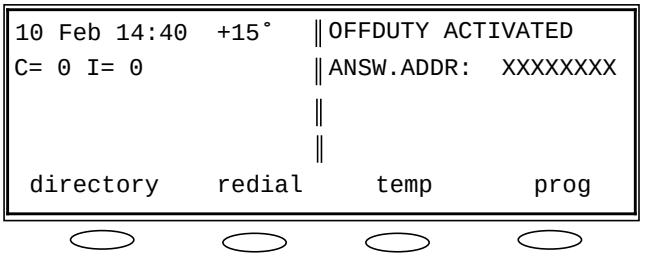
see "MESSAGE SYSTEM, document 341/155 34-ASB 150 02 Uen

Mailbox system

If the Operator is not in the office, he/she can offer the service to the caller to leave a message in the mailbox.

Offduty Press to activate / deactivate

Upon activating Offduty, the following display is shown:



`temp` Press (see display) and dial the individual / common Mailbox number

Press to confirm

For more information, see MAILBOX SYSTEM, document 340/155 34-ASB 150 02 Uen

Abbreviated numbers

Common and Individual Abbreviated numbers

See ABBREVIATED NUMBER DIALLING - COMMON NUMBERS and ABBREVIATED NUMBER DIALLING - INDIVIDUAL NUMBERS, document 101/155 34-ASB 150 02 Uen and 102/155 34-ASB 150 02 Uen

Integrated Telephone Directory

All directory numbers and common abbreviated numbers can be searched for in the integrated telephone directory.

For more information, see TELEPHONE DIRECTORY, document 481/155 34-ASB 150 02 Uen

Call Metering

General

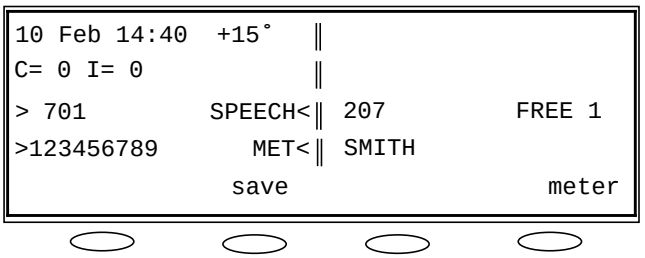
See CALL METERING,
document 141/155 34-ASB 150 02 Uen

Operator Supervised call

An extension can order an external call to be metered. There are two possibilities:

- Registration on the caller's individual call meter.
- Registration on a specified account number.

Set up the external line for the caller:

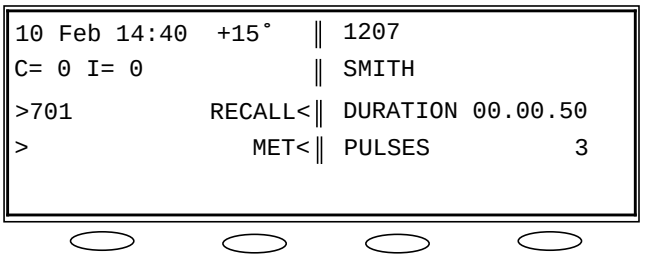


meter	Press (see display) and continue to set up the call

Recall after the call is terminated:

○/□	Press

The display informs about call duration, number of pulses or costs (depending on the configuration).



○/□	Press again

The call is registered on the caller's individual call meter.

For callers who do not belong to the operator's system (e.g CN users) registering to the caller's individual call meter cannot be applied. To have the possibillity to register the call to the calling party in the private network, the operator can register the call to a specified account code, which is associated to the calling number

Clear	Press to disconnect the call

Group facilities

Loudspeaker paging

See LOUDSPEAKER PAGING, document 322/155 34-ASB 150 02 Uen.

Common bell

The common bell facility allows all extensions of the system to pick up the call from an extension that has been predefined as common bell extension.

○○○○	Dial the common bell pick up code

For more information, see COMMON BELLL, document 151/155 34-ASB 150 02 Uen.

Other facilities

Reminder

The Operator's Console can be set to remind the Operator at any time within the next 24 hours (multiple settings are allowed).

✳ 3 2 ✳	Press and dial the extension number
activate	Dial the reminder time (HHMM) and press (see display)
Clear	Press to finish the procedure

Note: No voice information will be played to the Operator.

Cancel Reminder

# 3 2 #	Press

All reminder calls are cancelled

Clear	Press to finish the procedure

Account number

The Operator can place the costs for external calls on a selected account number (up to 15 digits).

✳ 9 ✳	Press and dial the extension number
#	Enter the account number and press

Internal dial tone, the user can make the external call.

Background music

In idle state the user can listen to music or other information via the monitoring loudspeaker.

Background music	Press to activate the music (pre-programmed)
	Press to cancel the music

For more information, see BACKGROUND MUSIC, document 120/155 34-ASB 150 02 Uen.

Intercom line

A two-way direct call function between two extensions/ Operators.

Intercom to secretary	Press to establish an intercom call (pre-programmed)
Speech	Press
Clear	Press to cancel the intercom call

For more information, see INTERCOM, document 266/155 34-ASB 150 02 Uen.

Automated Attendant

For information, see AUTOMATED ATTENDANT, document 114/155 34-ASB 150 02 Uen.

DISA

For information, see DISA WITH PASSWORD CONTROL, document 164/155 34-ASB 150 02 Uen.

Doorphone

The doorphone is used to monitor the admission to a company.

The doorphone function provides the feature to open the door from the Operator's Console.

Answering doorphone calls

Doorphone	Press to answer (pre-programmed)

Opening of the door

Dial the door-opener's directory number.

For more information, see DOORPHONE, document 168/155 34-ASB 150 02 Uen.

Headset functionality

Headset

If the Operator's Console is equipped with an Option Unit DBY 410 02, the following headset functions are available:

- Activate / Deactivate the headset

  Headset Press (pre-defined)

  Note: The Headset key is automatically placed on the second programmable key (Prog. key B) The Option Unit is installed on the telephone.

- Answer calls

  Press to have speech connection with the caller

  Clear Press to terminate a headset call

- Make calls

  Dial the number

  Clear Press to terminate the call

- Headset to handset

  Lift the handset

- Handset to headset

  Headset Press (pre-defined)

- Headset with group listening

  Press to toggle between headset with or without group listening

- Headset to handsfree

  Press

  Headset Press (pre-defined)

- Handsfree to headset

  Headset Press (pre-defined)

Option Unit

The Option Unit DBY 410 02 is an optional accessory, to be installed on the bottom of your telephone set. The following devices can be installed via the Option Unit:

- Tape recorder
- Extra bell or busy indication outside your door
- Enhanced headset functionality or a conference unit
- Second handset

For people with impaired hearing the Option Unit offers the possibility to amplify the receiving volume in the handset and headset.

Authority

A four-digit code for prevention of unauthorized use of the phone can be used.
For more information, see AUTHORISATION CODE, document 113/155 34-ASB 150 02 Uen.

ISDN Facilities

See ISDN FACILITIES, document 268/155 34-ASB 150 02 Uen.

Capacity

A maximum of three Operator Consoles can be connected to the system.
There is no restriction on the number of concurrently queuing calls to Operators.
Only one call at a time can be presented or connected.

Limitations

The Operator can make own outgoing calls, even if an incoming call has been presented.

Programmable Alternative Answer Position for the Operator

This facility can only be used by the last active Operator.
The alternative answering position and the offduty state will be lost after a restart of the system. After pressing the offduty key the Operator can change the default answer position. If the default answer position is not programmed via RASC, the display will show:

```
10 Feb 14:40  +15°   ‖OFFDUTY ACTIVATED
C= 0 I= 0            ‖ANSW.ADDR.      ????
                     ‖
                     ‖
  directory   redial      temp          prog
```

If a wrong answer position (e.g. a trunk number) is entered, all incoming calls will be routed to the default answer position programmed in RASC.

Programming

Adjustments

The following chapter explains how to configure the personal settings of the Operator.

Setting of the console to meet the Operator's requirements

```
10 Feb 14:40  +15°   ‖ Operator        200
C= 0 I= 0            ‖
                     ‖
                     ‖
 directory    redial                   prog
```

prog	Press (see display)

```
10 Feb 14:40  +15°   ‖ Operator        200
C= 0 I= 0            ‖
                     ‖
PHONE PROGRAMMING
   key    short-no.     settings     ringing
```

settings	Press (see display)

```
10 Feb 14:40  +15°   ‖ Operator        200
C= 0 I= 0            ‖
                     ‖
PHONE PROGRAMMING
answer     extend   signalling    return
```

Answer mode

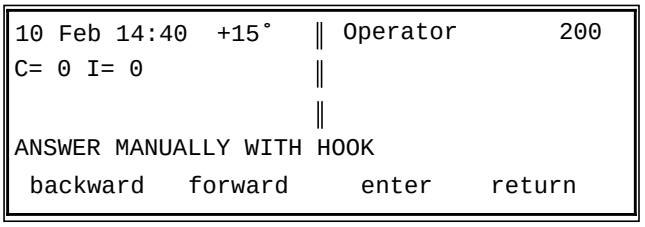
`answer`	Press (see display)

Three different answer modes can be selected:

a Answer manually with hook (default value)

b Answer manually with answer key

c Answer automatically (The call is connected automatically without pressing a key)
This is normally used in conjunction with a headset.



`backward,forward`	Press to select answer mode
`enter`	Press to confirm the setting
`return`	Return to previous display

Clear	Press to finish the procedure

Extend mode

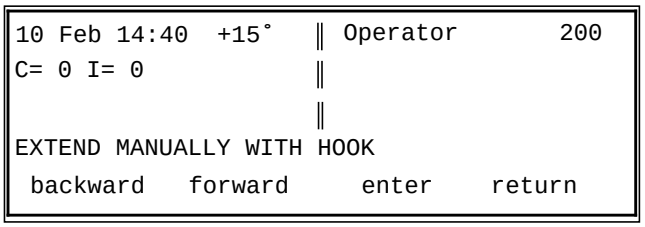
`extend`	Press (see display)

Three different extend modes can be selected:

a Extend manually with hook (default value)

b Extend manually with extend key

c Extend automatically (The call is extended automatically without pressing a key)



`backward,forward`	Press to select extend mode
`enter`	Press to confirm the setting
`return`	Return to previous display

Clear	Press to finish the procedure

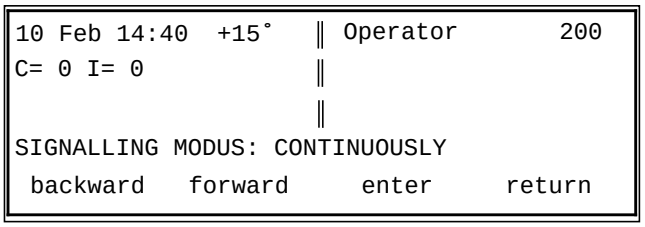
Signalling mode

`signalling`	Press (see display)

Two different signalling modes can be selected:

a Continuously (default value)

b Burst



`backward,forward`	Press to select signalling mode
`enter`	Press to confirm the setting
`return`	Return to previous display

Clear	Press to finish the procedure

Ringing signal

The ringing type (2 types), ringing volume (10 steps) and ringing character (10 characters) can be adjusted.

prog	Press (see display)

```
10 Feb 14:40  +15°   ‖ Operator       200
C= 0 I= 0            ‖
                     ‖
PHONE PROGRAMMING
   key    short-no.     settings     ringing
```

ringing	Press (see display)

```
10 Feb 14:40  +15°   ‖ Operator       200
C= 0 I= 0            ‖
                     ‖
RINGING - CHANGE
 type     volume      character    return
```

Now ringing type, volume or character (see display) can be chosen.

Clear	Press to finish the procedure

System programming

4101
Operator line position

The extension position to which the Operator is connected needs to be programmed.

The default value is the first individual on the first ELU-D board.

```
10 Jul 14:40   +15°
Operator LINE POS   C  4101    y  aabbb
 backward  forward     c/i      return
```

y	Enter Operator Console's order number (0 - 2)
aabbb	Board position of Operator Console: aa = board position (00-56) bbb = individual on board (000-031)

4102
Operator answer reference

Each Operator can be assigned a greeting announcement.
For recording of the voice answers, see also VOICE MESSAGES, document 522/155 34-ASB 150 02 Uen.

```
10 Jul 14:40   +15°
Operator ANSWER REF  C  4102    y  uuvv
 backward  forward     c/i      return
```

y	Enter Operator's order number (0 - 2)
uu	= 01
vv	Enter selected recorded voice message (1 - 32)

4103
Ring bursts at queue

The Operator Console can be programmed so that a ring signal is supplied when a call is queued

```
10 Jul 14:40   +15°
RING BURST AT QUEUE   C  4103      y     z
 backward  forward     c/i      return
```

y — Enter order number of Operator Console (0 - 2)

z — Enter relevant function:
Y = ringing signal to be supplied.
N = ringing signal not to be supplied (default value)

4104
Receiving of Tone Signals

This command determines whether or not tone signals should be sent to the Operator console.

valid value — YES / NO

default value — YES

Program name of Operator queue

See also TELEPHONE DIRECTORY, document 481/155 34-ASB 150 02 Uen.

1101
Answering positions

The command is used to determine the individual answering position for the trunk in a day-switched exchange. An individual answering position is selected by programming its directory number. If the directory number is erased, the individual answering position will be deleted. Incoming calls are always presented on those system telephones on which the trunk is represented by a button. This applies irrespective of the fact whether a directory number has been programmed as individual answering position.

Note 1: If the individual answering position has initial value = individual PBX-Operator number, command 4001 "General PBX-Operator's alternative answering position" will not be operative.

Note 2: When deleting the individual answering position, always make sure that an individual alternative answering position (e.g.: external line key) has been programmed so that incoming calls can be presented.

```
10 Jul 14:40   +15°
ANSWERING POS.DAY  C  1101    xxxx    zzzz
 backward   forward      c/i       return
```

xxxx — Enter the directory number of trunk
zzzz — Enter the respective directory number of the Operator queue

1102
Answering position at night

The command is used to determine the individual answering position for the trunk in a night-switched exchange.

```
10 Jul 14:40   +15°
ANSWERING POS.NIGHT  C  1102   xxxx   zzzz
 backward   forward      c/i       return
```

xxxx — Enter the directory number of trunk
zzzz — Enter the respective directory number of the Operator queue

1103
Reroute position at day

This command is used to determine the rerouting position of the trunk in a day switched exchange.

```
10 Jul 14:40   +15°
REROUTE POS. DAY  C  1103    xxxx    zzzz
 backward   forward      c/i       return
```

xxxx Enter the directory number of trunk

zzzz Enter the respective directory number of the Operator queue

1104
Reroute position at night

This command is used to determine the rerouting position of the trunk in a night switched exchange.

```
10 Jul 14:40   +15°
REROUTE POS. NIGHT  C  1104    xxxx    zzzz
 backward   forward      c/i       return
```

xxxx Enter the directory number of the trunk

zzzz Enter the respective directory number of the Operator queue

4001
Alternative answering position

If all Operators are marked "offduty" (absent), calls are to be directed to a programmed alternative answering position.

The answering position can be:

- Automated Attendant
- Common abbreviated number
- Common mailbox
- CN number
- Extension number
- Fictive number
- Group - (PBX) hunting number
- Paging number
- Operator number
- Voice answer number

```
10 Jul 14:40   +15°
ALT. ANSWER POS.       4001       zzzzzzzz
 backward  forward                  return
```

zzzzzzzz Enter the directory number of the respective answering position.

4003
Time for automatic marking of absence

If a presented call remains unanswered for a certain time, it will be directed to another Operator or, if none is available, to an alternative answering position.

This time can be changed.

```
10 Jul 14:40   +15°
NO ANSWER TIME         4003           zzz
 backward  forward                  return
```

zzz Enter the relevant time
(15 - 255 seconds).
Default value: 30 seconds

4004
Random selection ?

Calls in the Operator queue can be presented in fixed or rotary order.

```
10 Jul 14:40   +15°
RANDOM SELECTION ?     4004            z
 backward  forward                return
```

z — Enter respective function:
Y = Rotary order (default value).
N = Fixed order (always selects Operator 0, if free)

4005
Automatic answer supervision time

An Operator who is marked for automatic answer can be assigned a supervision time that will automatically mark the Operator absent if no key is pressed within the programmed time. The connected party will be disconnected

```
10 Jul 14:40   +15°
AUTO ANSW. SUP.TIME   4005           zz
 backward  forward              return
```

zz — Enter necessary number of minutes 0-11.
If value = 0 is set, there will be no supervision.
Default data = 11

Voice message to external caller

When there is a queue to the Operator, an external caller can receive a recorded queue message.

4006
Queue announcement time

This command is used to state the time that is to elapse before the caller receives the queue message.

```
10 Jul  14:40  +15°
QUEUE ANNO. TIME      4006           zzz
  backward  forward                return
```

zzz — Enter number of seconds (0 - 255).
Default data = 0 (no queue message)

The time for "Delayed Automatic Answer" plus the length of the "Voice Announcement" must not exceed the time programmed for "Delay time for the voice announcement for busy" ! (Otherwise the announcement of the Operator interrupts the trunk announcement.)

4007
Queue announcement reference

The queue message is recorded with the help of command 4401.

Command 4007 combines a recorded message with the function queue message.

For recording of voice messages,
see also VOICE MESSAGES,
document 522/155 34-ASB 150 02 Uen.

```
10 Jul 14:40   +15°
QUEUE ANNO. REF       4007          uuvv
 backward  forward                return
```

uuvv — Enter **01** and the number of recorded voice message (1 - 32).

The following commands are only accessible via RASC:

4008
Calling of extension at incoming call

This command makes possible to determine what will happen in the following traffic case:
There is an answered incoming call on the left side and the Operator has called a free extension on the right side. The Operator has not initiated ringing yet. At this moment the extension (on the right side) lifts the handset or answers in another way.

Alternatives:

0 = There will be a three-party connection between the Operator and the left and right side parties.

1 = The extension will be parked by the Operator.

4009
Two external lines at Operator 3-party

This command specifies whether two external lines are allowed in an Operator three party connection. The term "external lines" includes all types of external lines.

4010
Two PE-lines at Operator 3-party

This command specifies whether two public exchange lines are allowed in an Operator three party connection.

4011
Listening during the greeting announcement

This command states whether or not the Operator will listen to the caller during the greeting announcement.

Default data: NO
(The Operator hears nothing while the Operator greeting announcement is played.)

4012
Sending a ready tone after announcement

This command states whether the Operator gets a beep tone after the greeting announcement.

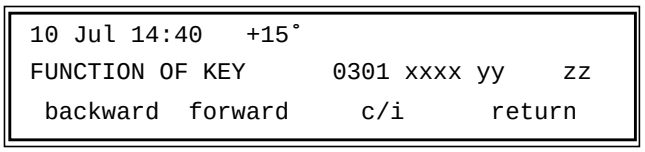
Default data: YES
(The Operator gets a beep-tone as soon as the Operator announcem. is finished)

Program key for parking

One of the programmable keys is to be programmed as Operator hold.

0301
Function of key

The key is used to park incoming, non-extended calls



xxxx Enter the Operator's individual directory number
yy Press the respective key (00 - 19)
zz Enter function code = 33

For the programming of functions on other programmable keys, see the facility description for the respective function.

Equipment

Operator's Console:

- DBC 214 with up to 4 key panels
- DBC 663
- DBC 754

Note: Every Operator's Console must always be connected to the FIRST position of the ELU-D (ELU-C)!

If voice answer for queue and/or greeting announcement is required, the PBX shall possess at least one VMU-D / -HD board.

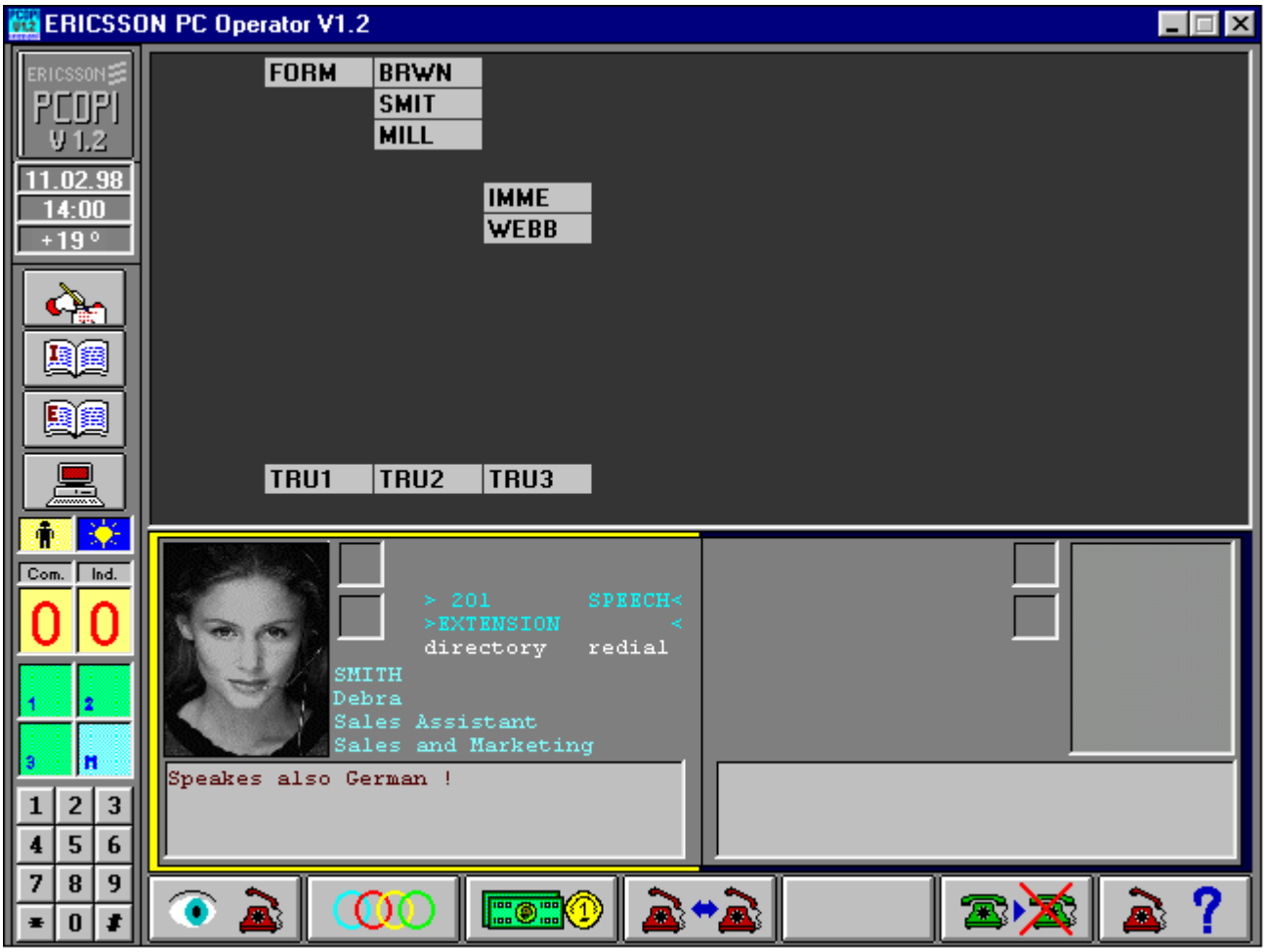
PC Operator Version 1.x

Definition

The PC Operator is a Windows-based Operator's console for ASB 150 02.

Use

The PC Operator presents in graphical format the call-handling information needed by the Operator.
ASB 150 02 has a special telephone for the Operator function (DBC 214) and additionally the PC Operator for faster call handling. The Operator can use the PC for handling the calls and the telephone purely for speech connection.
PC Operator can be operated using the mouse or the keyboard, depending on the Operator's personal preference. There is a fixed number of pre-programmed on-screen functions and a Busy Lamp Field (BLF) that the Operator can program so that the status of the selected extensions and trunks can be seen. Visual indicators on the BLF show whether lines are busy, free, ringing or have set absence information.



Operation

Operator Function Keys

The traffic keys that are provided on the PC Operator are:

- Queue information (common and individual)
- Loop and monitor keys for parked calls
- Notify
- Serial call
- Metering (not available in Version 1.0)
- Conference
- Bypass diversion
- Identify
- On/Off duty
- Night service

Additional buttons are available for the Operator's use:

- Set up (for busy lamp field)
- Internal telephone directory
- External telephone directory
- Configuration sequence

Traffic-handling functions

Calls are initiated in two fields on the PC Operator screen. The left-hand field displays details of incoming calls (internal, external, queued, recall etc.) and the right-hand field shows details of the extension to which the call is extended (free, busy, diverted, absent and so on). Apart from textual information about the extensions, a photograph of the extension user may be automatically displayed, if it has been scanned and stored in a connected directory.

Directories

PC Operator has two directories:
one for internal extensions and one for external numbers. Details can be entered into these directories by the Operator. Search functions help the Operator find the required external or internal number by name, company or function. Any items that the Operator programs on the Busy Lamp field are automatically inserted into the Internal Directory.

Mouse access

A 3-button mouse is used. This means that different features can be activated by different mouse buttons under any given traffic situation. It is, for example, possible to use different buttons when extending a call to an extension to determine whether the call is with or without announcement.

Background operation

PC Operator can be run permanently on-screen or in the background. If it is run in the background, it may pop-up on the screen prompt or delayed (programmable) in case of a new incoming call.

Busy Lamp Field (BLF)

Up to 150 positions per PC Operator can be monitored to show the status of the selected extensions and trunks. Visual indicators show whether extensions are free, busy, ringing or have set absence information. The positions to be monitored can be programmed by the Operator.

Function explanations:

Bypass Diversion

If an extension has activated diversion or follow me, this button allows the Operator to override call forwarding.

Conference

The Operator can speak to both the incoming caller and the extension by using this button.

Directory, internal / external

Built-in telephone directories for internal and external extensions.

Identify

Using this button the Operator can see to whom a busy extension is talking.

Images

Scanned bitmaps of extension users can be held within PC Operator so that they are displayed automatically when an extension is dialled.

Keypad

A graphical representation of the telephone keypad is always displayed on screen. By clicking on it with the right mouse button, the Operator can maximise it to a large window for easy access.

Loop

There are 3 Loop buttons and one Monitor button by which the Operator can park calls that are waiting for extensions to become free.

Night service

The programmable key C toggles ASB 150 02 between day and night service via the " * 8 # " -procedure.

Notify

The notify button is used to enable the Operator to announce a previously parked call to an extension that has become free.

Off-duty

The Operator can log off from the Exchange by pressing this button.

Operator fields

There are two fields for call handling. The left-hand field signals incoming calls, the right-hand field is used for outgoing traffic. Information about the calling line and the state of the extension (free, busy etc.) is shown in these fields.

Queue

Incoming call queues are signalled numerically on the screen.

Search

The Operator can search both directories to find extension users or external numbers.

Serial Call

Callers that need to speak to more than one extension can be put into Serial mode by use of the serial button. Callers will revert to the Operator when they have finished speaking to an extension

Setup

The Operator can configure the PC Operator and add the directory data necessary.

Capacity / Limitation

Up to 150 positions (extensions and trunks) per PC Operator can be monitored via the BLF.

Programming

The programmable key "C" has to be programmed as "Night Switch"-key:

✳ 0 0 ✳	Press to enter phone programming

key	Press (see display)

press respective key

change	Press (see display)

step "forward" or "backward" to NAMECALL

```
10 Feb 14:40  +15°   ‖ Operator       200
C= 0 I= 0            ‖
                     ‖
SELECT FUNCTION -   NAMECALL            10
 backward   forward     enter    return
```

enter	Press (see display)

Enter " * 8 # " :

```
10 Feb 14:40  +15°   ‖ Operator       200
C= 0 I= 0            ‖
                     ‖
ASSOCIATED NUMBER                    *8#
  store                            return
```

store	Press (see display)

Clear	Press to finish the procedure

For configuration of BusinessPhone PC Operator: see User's Guide, chapter ADJUSTMENT TO REQUIREMENTS.

0301
Function of programmable key

This menu shows the function of the progammable keys for the selected extension.
xxxx indicates irrelevant information for selected function of the key.

This command states which function a key is to have.

6006
Device type

The command defines to which type of connected unit the I/O-port is to be adapted.

Set to 14: PC Operator V1.x.

6009
Baudrate

The command defines the bit speed for the V24 port on the stated CPU-Dx or AUXx boards for the local connection of a terminal, computer or printer.

Set to 9600 Baud.

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		380/155 34-ASB 150 02 Uen	
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		99-07-15	F

Equipment

Operator's Console

DBC 214 or DBC 663 has to be used for connection to the PC Operator.

Connection to the ASB 150 02

The following hardware is required for the connection of the PC Operator to the ASB 150 02.

- Desktop Adapter
- Cable for connection of the Desktop Adapter and the digital system phone
- Cable for connection of the PC to the Desktop Adapter
- Cable for connection of the PC to ASB 150 02.
- CPU-D4 or higher version
  or
  CPU-D3 and AUX 3

Personal Computer

PC Operator requires the following minimum configuration of personal computers:

- 486 DX2 66 MHz processor
  100% IBM-compatible PC
- 16 MB RAM
- 15 MB free hard disk space
- 256 colours VGA Monitor
- Screen resolutions supported are 640 x 480, 800 x 600 or 1,024 x 768 pixels, with small fonts.
- MS-DOS 5.0 or higher
- MS Windows 3.1 / 3.11
  MS Windows 95
  MS Windows NT 3.51 or higher
- 2 free serial (COM) ports
- PC-bus mouse with 3 buttons (with PC-mouse interface card) or a serial mouse with 3 buttons (additional serial interface required).

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		380/155 34-ASB 150 02 Uen	
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		99-07-15	F

Operator Suite 3.4

Definition

Operator Suite provides a unified working environment for telephone operators, integrating powerful call handling, directory management, messaging, absence information and administration functions on a single PC. It is a suite of easy-to-use business software, working with the ASB 150 02 through a computer-telephony integration (CTI) link.

Using Operator Suite, the operator can make more effective use of time and provide a higher level of service to callers and extension users. Since the telephone operator is often the first point of contact between a company and its existing and potential customers, Operator Suite can help build up a positive reputation and image.

Operator Suite has been developed from the Dynamic Network Administration Suite for Ericsson's Consono MD110 business telephone system, and has a similar look and feel. Operator Suite has been tailored to the needs of small and medium-sized telephone systems; for instance, a programmable Busy Lamp Field (BLF) shows at a glance the status of trunks and extensions. Because Operator Suite is a third-party CTI software application, information such as directory data can be shared with other similar BusinessPhone solutions, including those for call centres, ensuring interoperability, minimising set-up time and reducing administration costs in larger telephone networks.

Operator Suite is a software package based around a Microsoft Windows NT 4.0 and SQL 6.5 database:

- **Operator Workstation**
  is the call-handling and administration application for the operator's PC.
- **Directory Manager**
  provides a graphical interface and administration tools for the system's directory subscriber database.
- **D.N.A Server (MRS)**
  (Management Repository Server) acts as the common data storage medium and communications interface for Operator Workstation and Directory Manager.

Use

The operator solution of Operator Suite is based on MD110 Operator Workstation Version 3.0 which is part of the D.N.A. (Dynamic Network Administration) concept. Operator Suite has been adapted to work as CTI-client towards ASB 150 02 and enhanced by some special features for the BusinessPhone segment.

The Operator Suite software products are a comprehensive set of graphical PC-based tools that support all aspects of ASB 150 02 operator functions, including:

- Operator call management
- Directory management
- High-level telecommunications networking
- Server based directory, advanced directory functionality
- Advanced message handling (E-mail)
- Free seating
- Enhanced information messaging (ASB 150 05 information system)
- Customisable user environment
- Busy Lamp Field
- Interaction with other BusinessPhone 3rd party CTI applications (e.g. BusinessPhone Call Centre Assistant)

Operator Suite is developed to run under the Microsoft Windows NT operating system and to work towards the PBX via the BusinessLink for Windows NT (3rd party CTI: TSAPI Link for Win NT).

The complete Operator Suite solution consists of the following parts, bundled to one special BusinessPhone package:

Operator Workstation (OWS)

Operator Workstation (OWS) is an administrative tool for operator call management of ASB 150 02 telephone traffic.

The Operator Workstation application introduces efficient graphical point-and-click controls and fully integrated on-screen directory assistance. These basic functions are complemented by a powerful Busy Lamp Field that provides an instant overview and associated

operator functions for each individual part of the exchange managed by individual operators.

Directory Manager (DMG)

DMG provides a graphical user interface plus tools for the administration of the directory database. It is a prerequisite application for OWS and can be run on the same PC as OWS if required.

D.N.A Server (Management Repository Server)

MRS module is the heart of the whole solution. It serves as common data storage medium and communications interface for Operator Workstation and Directory Manager.

The DNA Server will be shipped with following administrative utilities:

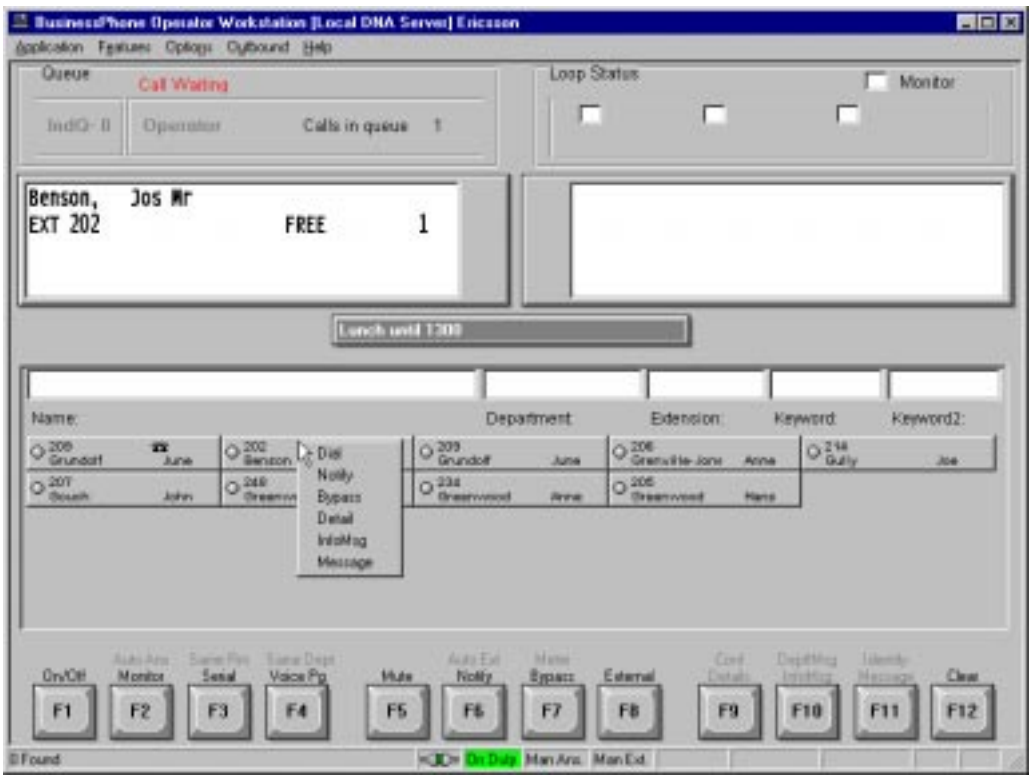
- **RDS Configuration**
  Remote communications settings and database access parameter setup and support. Runs on DNA Server.
- **User Configuration**
  Operator Suite security management. Runs only on DNA Server.
- **Server Configuration**
  Defines which servers are accessible through the network.
- **License Viewer (Licensing)**
  Low-level: Operator Suite security management (read-only). Runs only on DNA Server.

  High-level: Software Licensing. Runs on any PC in a TCP/IP based network. Each PC on which Operator Suite utilities are installed must have at least a Software Licensing Client installed. The Software Licensing Server is installed on the PC on which the Software Protection Device has been physically connected.
- **Directory Configuration**
  OWS directory data table structure creation. Runs only on DNA Server.
- **Trunk Management/Configuration**
  To define operator-friendly trunk identifier names for OWS incoming call display. Runs only on DNA Server.
- **Directory Import**
  For initial population of OWS directory assistance database. Runs on DNA Server and specific Operator Suite clients.

  For initial and update population of OWS directory assistance database from BusinessPhone RASC database.
  Runs on DNA Server and Operator Suite clients.

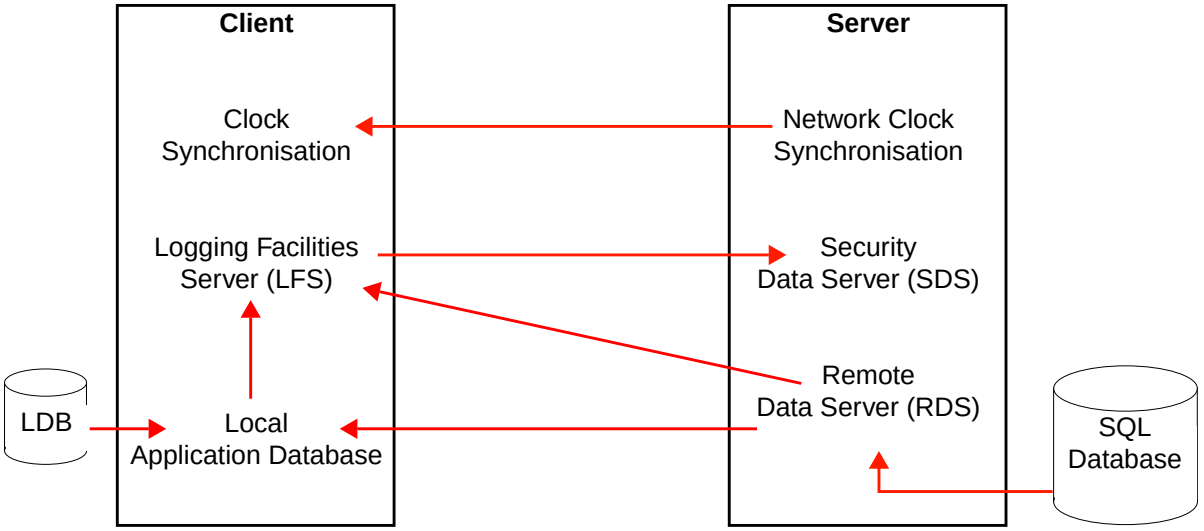
Operation

Operator Workstation (OWS)



Directory Manager (DMG)

Client / Server architecture of Operator Suite



Capacity

1 DNA Server per system
3 OWS clients per system
1 DMG client per system

up to 40 CTI-monitored extensions
up to 80 CTI-monitored (monitoring light for BLF) extensions

100.000 directory entries
3 subscriber types (person, function, room)

Limitations

Only three (3) Operator Workstations can be active at the same time.

The Microsoft Windows NT - SQL Workstation 6.5 has an build-in limitation of 15 user connections as a maximum, which means that only one (1) OWS and one (1) DMG can be run at the same time.

Programming

See START OF OPERATION (2/1537-ASB 150 02 Uen).

0175
Use as CTI operator instrument

Defines if a specific extension is allowed to act as CTI operator instrument.
Command must be set to Yes (Y) for each extension used as CTI operator (OWS).

For specific Operator programmings see the corresponding facility descriptions:

- Voice Paging
  See LOUDSPEAKER PAGING,
  document 322/155 34-ASB 150 02 Uen.
- Night Mode
  See NIGHT SERVICE,
  document 362/155 34-ASB 150 02 Uen

Equipment

Operator's Telephone

The Operator Suite could be used in combination with one of the following digital telephone sets:

- Economy telephone:
  DBC 211, DBC 201, DBC 751, DBC 601
- Standard telephone:
  DBC 212, DBC 202, DBC 755, DBC 631
- Executive telephone:
  DBC 213, DBC 203, DBC 753, DBC 662
- Operator Console:
  DBC 214, DBC 663, DBC 754
- Note: Every Operator Console must always be connected to the FIRST postition of the ELU-D (ELU-C) or MFU

ASB 150 02 system software R10 or higher and one free V.24 port on the CPU-D_4 board are required.

Protection Unit

An adaptation unit (also known as WIBU-dongle) is required for every software release. This determines the number of agents supported by the system according to the structure of the product. For a detailed description of the adaptation unit handling please refere to the Technical Guide of OPS. You will find there very important notes concerning protection philosophy of OPS.

Connection to the ASB 150 02

The following hardware is required for connection of the OPS to the ASB 1500 02.

- V.24 cable to connect ASB 150 02 and the Server PC

For detailed information about the connection to the ASB 150 02, see document START OF OPERATION (2/1537-ASB 150 02 Uen).

For detailed information about the installation of the software, see OPS Technical Guide.

Hardware Requirements

OPS Server:

Pentium 133 MHz Windows NT compatible PC
64 MB RAM
Network Interface Card
500 MB of free hard-disk storage
1 free serial port (BusinessLink NT)
1 free parallel port (security device)
CD-ROM drive for software installation

OPS Clients:

Pentium 100 MHz Windows NT compatible PC
Monitor with 800 x 600 resolution
32 MB RAM
50 MB of free hard disk space
Network Interface Card

Communication:

TCP/IP protocol
NetBEUI protocol

Note: These are only minimum hardware requirements for OPS application. If other applications are also running on the same PC, a higher grade machine will be required.

Software Requirements

OPS Server:

Microsoft Windows NT version 4.0
Microsoft Windows NT - SQL Server 6.5 or
Micorsoft Windows NT - SQL Workstation
BusinessLink 32-bit Client DLL

OPS Clients:

Windows NT version 4.0
BusinessLink 32-bit Client DLL

Documentation

The documentation will be delivered on the product CD-ROM in Adobe PDF (printable document format) in

two versions (designed for screen viewing and designed for printing).

- BusinessPhone Operator Workstation - User's Guide
- BusinessPhone Direcotry Manager - User's Guide
- BusinessPhone DNA Server - User's Guide
- BusinessPhone Operator Suite - Technical Guide
- BusinessPhone Operator Suite - Technical Information
- BusinessPhone Operator Workstation - Quick Reference Guide
- BusinessPhone Direcotry Manager - Quick Reference Guide

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SEA/TB/MP T.Preißner	SEA/TB/XE	381/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved	Kontr/Checked	Datum/Date / Rev	Tillhör/Referens-File/Reference
SEA/TB/MP		97-10-31 / C	ASB 150 02
		Database reference	
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OUTGOING EXTERNAL CALLS

Definition

Call from extension or other trunk to the public exchange or another PBX.

Use

Allows extension users to initiate external calls to the public telephone network.

An outgoing external call can be initiated via one of the following facilities/functions:

- Selection of route number
- Selection of individual trunk number
- Selection of individual external line key
- Abbreviated number dialling
- Saved external number redial
- Last external number redial
- Name selection key with stored abbreviated number.

Operation

System Telephones

Outgoing external traffic can be initiated in one of the following ways:

Route selection

- Dial route number.
  The system itself selects a free external trunk within the route
- The extension can then dial the relevant external number

See also ROUTE SELECTION, document 444/155 34-ASB 150 02 Uen.

Directory number of trunk

- Dial directory number of relevant trunk
- Dial relevant external number

External line key

- Press relevant external line key on system telephone.
  State of trunk is shown on associated lamp.
  Then dial relevant external number

See also EXTERNAL LINE KEY, document 180/155 34-ASB 150 02 Uen.

Abbreviated number dialling

- Dial abbreviated number.
  System selects free trunk and transmits stored digits

See also ABBREVIATED NUMBER DIALLING, document 101/155 34-ASB 150 02 Uen.

Saved external number redial

- Press **Save/Redial** key.
  If saved number exists, a trunk will be selected automatically and saved (stored) number will be transmitted

See also SAVED EXTERNAL NUMBER REDIAL, document 460/155 34-ASB 150 02 Uen.

Last external number redial

Each dialled external number will automatically be stored, independent of how it was dialled manually, using abbreviated numbers or a name selection key. The new directory number replaces the previous one.

- Dial *** * *** to redial the last external dialled number

See also LAST EXTERNAL NUMBER REDIAL, document 320/155 34-ASB 150 02 Uen.

Name selection with stored abbreviated number

A common abbreviated number can be stored on a name selection key.

- Press name selection key.
  System selects free trunk and transmits stored number via this trunk

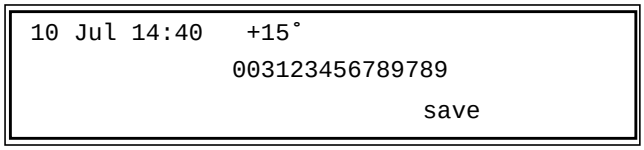
See also NAME SELECTION,
document 360/155 34-ASB 150 02 Uen.

Indication on display

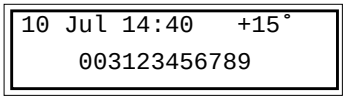
Analogue + digital CAS lines

On a telephone with display, dialled digits are shown:

EXECUTIVE Telephone



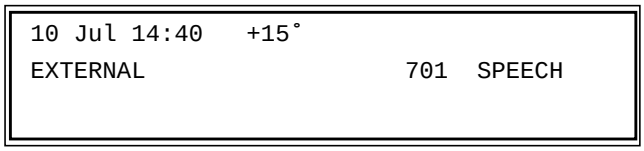
STANDARD Telephone



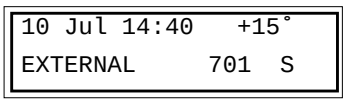
The display will show the dialled number until the trunk is parked for the first time.

When the parked trunk is reaccessed the display shows trunk number:

EXECUTIVE Telephone



STANDARD Telephone



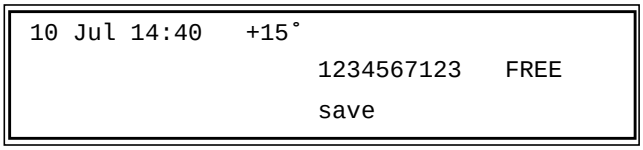
ISDN trunkline

The display shows the dialled external number and also the call status message in the same way as it is used for internal calls.

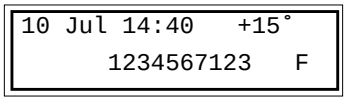
Following call states messages will be indicated:

- Free
- Busy
- Speech
- Unknown
- Incomplete
- Congestion

EXECUTIVE Telephone



STANDARD Telephone



The dialled number will always be shown on the display also after a reaccess when the call has been parked.

If the outgoing call is answered by another number than the dialled one, the national significant number (public destination code + public subscriber number) of the actual connected party is presented on the display.
(further information see ISDN - Supplementary service COLP in doc. 268/155 34-ASB 150 02 Uen)

Call metering

When the system receives charging information at outgoing calls from the public network, the STANDARD and EXECUTIVE Telephone can activate the cost indication and the elapsed charging data will be presented on the display.

EXECUTIVE Telephone

```
10 Jul 14:40   +15°          56.80 ATS
                    1234567123   SPEECH
                       save     cost-off
```

STANDARD Telephone

```
                          42.60 ATS
                    1234567123   S
```

For further information about Call metering, refer CALL METERING, document 141/155 34-ASB 150 02 Uen.

Route number

- Dial route number.
  System selects free trunk in the route.
- Extension can now dial relevant external number.

See also ROUTE SELECTION, document 444/155 34-ASB 150 02 Uen.

Common abbreviated number

- Dial abbreviated number.
  System selects free trunk and transmits stored digits

See also ABBREVIATED NUMBER DIALLING, document 101/155 34-ASB 150 02 Uen.

Directory number of trunk

- Dial trunk's directory number, whereby specific trunk can be selected
- Now dial relevant external number

Capacity

By parking a call, an extension user can initiate one or more outgoing external calls.

Limitations

Access by extensions to this facility is controlled by the TCD (Trunk Call Discrimination) facility and traffic group matrix.

Programming

None.

Equipment

None.

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Dokansv/Godkänd - Doc respons/Approved	Kontr/Checked	Datum/Date / Rev	Tillhör/Referens-File/Reference
SEA/TB/MP		97-10-31 / C	ASB 150 02
		Database reference	
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OUTGOING CALLS VIA LINE 1, LINE 2 OR INQUIRY-KEY

Definition

Denotes calls that are initiated by an extension and which utilise one of the traffic function keys **Line 1**, **Line 2** or **Inquiry**.

Use

An outgoing internal call is utilised to call another extension in the system.

Operation

System Telephones

An extension user can select one of the following alternatives:

On-hook dialling

- Dial relevant number directly on keyset
- **Line 1**-lamp flashes to confirm connection
- **On/Off**-lamp glows steadily.
  Caller hears tone message in loudspeaker

On-hook dialling via On/Off-key

- Press **On/Off**-key or **Line 1**-key
- **Line 1** is seized and **Line 1**-lamp flashes to confirm connection.
  On/Off-lamp glows steadily
- Extension user hears dial tone
- Extension user dials relevant number
- Caller receives tone message via loudspeaker

If the desired party answers the call, user with an ECONOMYplus, STANDARD or EXECUTIVE Telephone may continue in handsfree mode.

Handset call

- Lift handset
- **Line 1** is seized and associated lamp flashes to confirm connection
- Extension user hears dial tone
- Extension user dials desired number
- Extension user receives tone message via handset.

Indication on display

A telephone with display shows:

EXECUTIVE Telephone

```
10 Jul 14:40   +15°
JOHNSON ANDREW              205  FREE
```

STANDARD Telephone

```
10 Jul 14:40   +15°
JOHNSON A    205  F
```

Connection message "FREE" ("F") indicates that the called internal party is free and that the call has been established via the latter's **Line 1**.

Analogue Telephones

To initiate a call

- Lift handset and await internal dial tone
- Dial relevant number
- When entire directory number has been dialled caller receives relevant tone message.

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		382/155 34-ASB 150 02 Uen	
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Capacity

An Analogue telephone has only one call possibility.

A System telephone has three different call possibilities: **Line 1**, **Line 2 *** and **Inquiry** key.

(* Not available on the BASIC Telephone)

Limitations

An extension with **Line 1**, **Line 2** and **Inquiry** can initiate outgoing calls even if an incoming call has been signalled via another traffic function.

Line 2 can be used for outgoing calls even if it is blocked for incoming calls.

Programming

2028
Ring time internal calls

This command defines the time needed for sending a Ringing Signal to an extension in case of an internal call.
Valid values for this command are 0-255.

With 0, no supervision is active.

All other values state the ringing time in seconds.

If a call is diverted because of an unanswered call the stipulated time is reseted and the supervision restarted.

2030
Disconnect tone digital extension

If the other party goes on-hook, an analogue extension always receives a disconnection tone (max 8 sec), for a digital extension (with L1,L2 and Inquiry) the disconnection tone is optional.

No: Extension disconnected directly without any tone.

Yes: Extension disconnected with tone (max 8 sec).

2027
Inactivity tone time

If you do not dial fast enough (within 8 seconds), the call will be disconnected and you will hear a tone message (TONE.INACT). The duration of this tone is determined by this command.

The time is programmable because of different market requirements
Note that this time is used at normal dialling only.

If you are disconnected by a service (e.g. information), the time that has been specified by the service will be used, normally 8 seconds.

Value: 1 - 255 seconds

If a special inactivity tone is sent, the time for that tone can be programmed.

Equipment

None.

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SEA/TB/MP		98-01-27 B	ASB 150 02
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PAGING

Definition

Paging denotes a function where, by connecting different types of external equipment, personnel in a certain area can be located.

Paging in ASB 150 02 can be one of the following types:

- Radio paging via bleeper
- Radio paging via display receiver
- Acoustic paging.
  See LOUDSPEAKER PAGING, document 322/155 34-ASB 150 02 Uen.

Use

Equipment for paging is essential for activities where people (employees) are mobile when carrying out their duties and must be accessible.

Those who are to be paged (pagees) are equipped with a pocket receiver that can be one of two kinds:

- Bleeper with/without speech possibility
- Display pager with/without speech possibility

Bleeper

A bleeper signals with sound only.

To ascertain who the pager is, the pagee must answer the call with an answer code.

"Meet-me paging" means that the pager waits with handset off-hook and the pagee replies with a special answer code (meet-me answer).

Paging unit with display

Also a paging unit with display issues a sound signal, but here there is also a display that shows the pager's extension number.

Display paging enables an internal pager to replace her/his handset immediately.

The pagee then uses the nearest (any) telephone to dial the number shown on the display.

Connection of external paging equipment

The radio signals to the receivers are transmitted from a base station that is connected to ASB150 02.

Connection is set up via a selected analogue trunk.

Signalling to the paging equipment utilises loop signalling.

Operation

All telephones

Start standard paging

Paging can be activated both from idle state and during an ongoing call.

Call from idle state

- Pager dials selected call number for paging
- Pager dials directory number of extension to be paged

Pagee has display receiver

- Pager hears verification tone when paging message has been sent.
  Pager can now replace handset

Pagee has bleeper

- Pager hears ring control tone until pagee answers

Activation of paging on no reply

- On no reply, pager dials relevant postdialling digit (normally **7**) in order to activate paging.

From analogue telephone

- Press **R**-button and **7**
- Ongoing call is disconnected whereafter call to paging equipment takes place
- If pagee has display receiver, pager will hear verification tone when paging message has been sent

Pager can now replace handset.

- If pager has bleeper, pager hears ring control tone until pagee answers.

Answer

The answering procedure varies, dependent on the type of paging receiver

Display receiver

For internal paging the following applies:

- Pagee dials digits shown on receiver display. Call is connected to pager

For paging externally the following applies:

- Pagee dials digits shown on receiver display. Pagee is connected to the external pager

Bleeper

- Pagee dials selected digit for answer of paging call
- Pagee dials own directory number
- If pager has not gone on-hook, he/she receives a tone burst, whereafter speech connection is established.
  If the pager has gone on-hook, he/she will be rung as for a normal incoming call

Diversion to paging function

- An extension user can connect himself to the paging number via follow-me or diversion procedure.
  For diversion, the call number is inserted as divertee position

Procedure for follow me:

Dial ***21***(call number) #

Mode digits

If the paging equipment accepts mode digits for different types of paging, these digits can be sent by ASB 150 02.

If the pager wishes to select the mode digit her-/himself, the call must be made using the number for alternative paging.

See below.

Speech possibility

Some paging units allow a spoken message to be sent to the pagee.

If paging with speech possibility is utilised, this is indicated by the mode digit.

The time allowed for a spoken message is limited, as the paging channel is occupied during this period.

The permitted time is stated via command.

Alternative paging

By dialling the digit for alternative paging, the pager can her-/himself choose between two types of paging:

- Display message = mode digit **5**
- Loudspeaker paging = mode digit **6**

Call code ***** Mode digit ***** Paged extension ***** (message if any) #

The display shows for example:

EXECUTIVE Telephone

```
10 Jul 14:40   +15°
              11*6*202*12345#
```

STANDARD Telephone

```
10 Jul 14:40   +15°
11*6*202*12345#
```

Capacity

A maximum of 250 paging numbers are permitted.

Of these numbers up to 50 can be temporary numbers utilised for example by visitors.

The maximum permitted number of unanswered meet-me calls is 25.

The number of concurrently ongoing paging calls in the system is dependent on the number of connected paging channels.

Each paging channel in the paging equipment requires an analogue trunk in ASB 150 02.

Limitations

Paging is possible in one paging sector only.

Each extension can make one paging call at a time.

If there is no free paging channel congestion tone will be received.

Programming

Programming a selected trunk line

The trunk line or trunk lines selected for connection to the paging facility needs to be programmed for this. See also TRUNK, document 486/155 34-ASB 150 02 Uen.
If several lines are connected these are placed in one route. See also ROUTE SELECTION, document 444/155 34-ASB 150 02 Uen.

3201
Route member's dir no.

This command states which trunks are to belong to a route as well as the position of the trunk within the route.
The selected trunk line must also be removed from the existing route.

8105
Paging channel

The paging equipment is connected to ASB150 via one or more trunks, depending on how many channels are desired.
If several channels shall exist, these trunks must be placed in one route.
This command is used to determine the channel number, i.e. the call number of the paging equipment. The number shall be either the directory number of the trunk or route, depending on whether one or several channels shall exist.

The stated channel number must exist in the system.

When paging is initiated, paging code, mode digit/ message (if used) are sent to the paging equipment via the paging channel stated in this command.

To assign paging possibility

3064
Program facility category (COS) list

To undertake paging an extension user must possess a facility category (COS) that permits paging.

This command opens those facility categories that permit paging.

```
10 Jul 14:40   +15°
PAGING                3064   xx        z
 backward  forward     c/i      return
```

xx	Enter relevant facility category (0 - 15)
z	Enter relevant function: Y = paging permitted N = paging not permitted (default value)

0101
Assign extension facility category

The extension shall be assigned a facility category that includes the paging possibility

```
10 Jul 14:40   +15°
FACILITY COS          0101 xxxx       zz
 backward  forward     c/i      return
```

xxxx	Enter extension's directory number
zz	Enter relevant facility category (0 - 15)

Directory numbers for paging

In order to initiate and answer paging calls it is necessary to create directory number for these functions.

5410
Creating standard paging

This command is used to create a call number for standard paging, i.e. (if any) mode digits sent in accordance with programmed commands 8103, 8112-8120 and 8118.

5411
Create alternative paging

"Alternative paging" means that the pager can her/ himself determine the desired mode digit in accordance with programmed commands 8116-8117.

5412
Create meet-me

This command is used to create an answer digit for meet me paging.

2407
Radio paging

Paging can be started with a postdialling digit. This digit = 7. Another digit can be selected with this command.

5510 Delete standard paging

5511 Delete alternative paging

5512 Delete Meet me

5617 Alter standard paging

5618 Alter alternative paging

5619 Alter Meet me

Defining paging functions

8101
Number of digits in paging code

The number of digits in the receiver number that is demanded by the paging equipment is stated here.

8102
Number of digits to be shown on display

If the receiver has a display the number of digits to be transmitted to the receiver shall be stated here.

8104 Paging absence ?

Whether the paging equipment can send an signal that e.g. the receiver is in its charging compartment is to be stated here

***8106 Display string**

Whether any special digits are to be displayed on the pagee's display when the call is external is stated here. If no digits are stated the answer digit plus display will be shown.

8107
End of paging number

Whether the end character (#) shall be sent for DTMF-signalling to the paging equipment is stated here.

8108
Max paging speech time

If the receiver permits voice paging, the maximum time for speaking with the pagee is stated here.
Initial value = 10s

8109
Paging meet-me time

The time at the disposal of the pagee before the paging call is cleared down. Initial value = 60s

8110
Paging progress time

The time that the connection to the paging equipment shall remain in order to guarantee paging is stated here. If the paging equipment supplies a verification signal clear down ensues automatically

Initial value = 5s

8103
Mode digits

If a mode digit can be sent to the receiver, whether this digit shall be placed before or after the paging code shall be stated here.

8112-8118
Mode digits

If the connected paging equipment can accept mode digits these can be altered with the help of commands 8112-8118. If no mode digit is desired this is written over with the help of the space-key.

Programming of paging receiver

8201
State receiver's directory number

This command is used to connect the extension's (pagee's) directory number to the pager's number

```
10 Jul 14:40   +15°
PAGING RECEIVER DIR   8201 xxxx     zzzz
 backward  forward     c/i       return
```

xxxx	Enter receiver's number (1 - 250)
zzzz	Enter extension's (pagee's) directory number

8202
Paging code for receiver

This command informs the system of the paging codes to be used for the paging units

```
10 Jul 14:40   +15°
PAGING SEARCH CODE    8202  xxx     zzzz
 backward  forward     c/i      return
```

xxx Enter receiver's number (1 - 250)

zzzz Enter receiver's paging code (1 - 4 digits)

8203
Type of receiver

Here is stated the type of receiver the extension is equipped with.

```
10 Jul 14:40   +15°
PAG. RECEIVER TYPE    8203  xxx        z
 backward  forward     c/i      return
```

xxx Enter receiver's number (1 - 250)

z Enter type of receiver (0 - 6)

0 = Bleeper without display (default data)

1 = Display receiver for call-me

2 = Receiver with speech possibility without display

3 = Receiver with speech possibility with display

4 = Group call without display

5 = Group call with display

6 = Display receiver for meet-me

Equipment

The function requires a free tie line individual on the BTU-E or a free trunk individual on the BTU-A and an external paging unit with bleeper or display receivers.

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
SEA/TB/MP T.Preißner	SEA/TB/XE	401/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved: SEA/TB/MP	Kontr/Checked	Datum/Date: 97-10-31	Rev: C
		Database reference: 401.fm	Tillhör/Referens-File/Reference: ASB 150 02

PARKING FOR COMMON ACCESS

Definition

Parking for common access means that an extension user, by initiating a procedure, can make her/his ongoing call accessible to other extensions in the system.

Calls parked for common access which are not reaccessed within a preprogrammed time will recall the extension that parked the call.

Use

Parking for common access can be utilised when it is desired to accept a call on another telephone (extension) than the one where the call has been answered.

The call on **Line 1**, **Line 2 *** or **Inquiry** can then be parked for common access.

This means the call will be picked up by an optional extension.

A call via a trunk can be parked for pick-up via an external line key on another extension telephone.

This function is particularly useful in key systems.

Operation

System Telephones

For this function a key must be programmed as a **Hold**-key.

Parking

- Press **Hold**-key.
  Lamp for relevant traffic function key flashes slowly
- If parked party is a trunk, the lamp will flash slowly on telephones on which the line is represented by lamps.

If the extension who parks the call has a telephone with display, this will show:

EXECUTIVE Telephone

```
10 Jul 14:40   +15°
PARKED CALL
directory            redial   prog
```

STANDARD Telephone

```
10 Jul 14:40   +15°
PARKED CALL
```

If the parked party (extension) has a telephone with display, the latter will show:

EXECUTIVE Telephone

```
10 Jul 14:40   +15°
JOHNSON ANDREW            202  PARKED
```

STANDARD Telephone

```
10 Jul 14:40   +15°
JOHNSON A    203  P
```

Pick up of a parked call on Line 1, Line 2 * or Inquiry

A call parked for common access on **Line 1**, **Line 2 *** or **Inquiry** is picked up via the function "call pick-up - individual".

- Key number of the extension from which parking was undertaken and, when busy tone is heard, dial digit for pick-up (normally "**6**")
- Parked call is connected and indication of parking on display (if any) extension ceases. Lamp for relevant trunk glows steadily on all telephones on which it is represented

If party, who picks up call, has telephone with display, top row show name and number of the party by which the call was picked up. Second row shows the conversation partner.

EXECUTIVE Telephone

```
SMITH JOHN                205
JOHNSON ANDREW            202  SPEECH
```

STANDARD Telephone

```
SMITH J      205
JOHNSON A    203  S
```

(* not available on the BASIC Telephone)

Pick up of parked call on trunk

Calls parked via an external line key for common access are picked up by pressing the key whose lamp is flashing slowly or, if so programmed, by dialling the directory number of the relevant trunk.

- Press external line key or dial directory number
- Lamp for external line key flashes to confirm connection

The lamp for the corresponding key on other system telephones changes to steady glow as indication that the line is busy.

On a telephone with display, the number and designation of the trunk will be shown

EXECUTIVE Telephone

```
10 Jul 14:40   +15°
EXTERNAL                  703  SPEECH
```

STANDARD Telephone

```
10 Jul 14:40   +15°
EXTERNAL     703  S
```

Recall

Calls parked for common access that have not been reconnected within a predetermined time (normally 60s) will recall the extension that parked the call.

The lamp for the key at which the function is parked flashes rapidly, and on a telephone with display the following is shown:

EXECUTIVE Telephone

```
10 Jul  14:40  +15°
EXTERNAL                  703  RECALL
```

STANDARD Telephone

```
10 Jul 14:40   +15°
EXTERNAL     203  R
```

Analogue telephones

Parking

- Press **R**-button
- Wait for dial tone
- Replace handset

Pick-up

Calls parked for common access are picked up via the function "call pick-up - individual".

- Lift handset and await dial tone
- Dial number of extension that parked call and when busy tone is heard dial digit for pick-up (normally "6")
- Parked call is connected and (if any) indication on display of parking extension ceases.
  Lamp for relevant external line key glows steadily on all telephones on which trunk is represented

A trunk that has been parked can be picked up via its directory number, provided that the trunk has been programmed accordingly.

Capacity / Limitations

Pick-up of parked calls is possible from all types of telephones.

Calls utilising intercom cannot be parked for common access.

Calls that are not picked up via the parking extension or other extension within a preprogrammed time will recall the parking extension.

Programming

System Telephones require a programmed key.

```
10 Jul 14:40   +15°
FUNCTION OF KEY       0301 xxxx  yy     z
 backward  forward     c/i      return
```

xxxx	Enter extension's directory number
yy	Enter relevant key (00 - 48)
zz	Enter selected function = 35

Following commands are only accessable via RASC:

2101
Time for a recall on parking

The time for a recall can be changed 0-255 s. Basic time 60 s. No recall is made if the time is set to 0.

1020
Re-accessing a parked trunk

Whether a parked trunk line shall only be re-accessed (picked up) by depression of the external line key, or whether re-accessing shall also be possible via the directory number for the trunk line is a selectable function.

Equipment

None.

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
SEA/TB/MP M.Plattner	SEA/TB/XE	402/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved	Kontr/Checked	Datum/Date / Rev	Tillhör/Referens-File/Reference
SEA/TB/MP		97-10-31 / C	ASB 150 02
		Database reference	
		402.fm	

PARKING - INDIVIDUAL

Definition

Individual parking means that an ongoing call can be parked temporarily for later reaccess by the extension who parked the call.

Use

Individual parking is used when one wishes to deal with another call or temporarily leave the telephone.

On initiation of an inquiry call, individual parking will be executed automatically.

Operation

System Telephones

Parking

Parking of an ongoing call is achieved as follows:

- Press traffic function key for function to be parked individually
- Lamp for key flashes slowly
- Call partner encounters silence or music-on-hold.

When an extension user parks a traffic function without another function being connected, the display on the telephone will show:

EXECUTIVE Telephone

```
10 Jul 14:40   +15˚
PARKED CALL
directory            redial      prog
```

STANDARD Telephone

```
10 Jul 14:40   +15˚
PARKED CALL
```

If the parked extension has a telephone with display, the call status "PARKED" or "P" will be shown:

EXECUTIVE Telephone

```
10 Jul 14:40   +15˚
JOHNSON ANDREW            202  PARKED
```

STANDARD Telephone

```
10 Jul 14:40   +15˚
JOHNSON A    203  P
```

Reaccess

The extension can reaccess the parked call at any time by pressing the relevant traffic function key once more.

The associated lamp flashes to confirm connection and speech connection with the parked party is re-established.

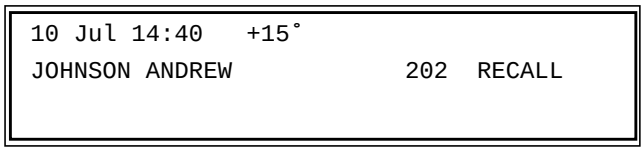
Recall

If the parked party is not reconnected within a preprogrammed time, the parked call will recall the extension who parked the call.

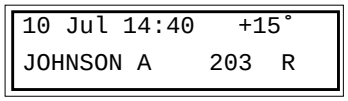
The call is signalled by rapid flashing on the relevant lamp and internal or external ring signals.

A telephone with display shows "RECALL" or "R" to indicate that the call is a recall.

EXECUTIVE Telephone



STANDARD Telephone



If the user has another traffic function connected when the preprogrammed time expires, there will be no recall.

The recall is answered by pressing the relevant traffic function key as for normal reconnection of a parked party.

Analogue telephones

These telephones do not permit manual individual parking.

On these telephones automatic individual parking takes place on depression of the **R**-button in conjunction with inquiry.

See also INQUIRY,
document 264/155 34-ASB 150 02 Uen.

Individual parking is also possible if a call is camped on to the user's telephone.

See also CALL WAITING INDICATION,
document 145/155 34-ASB 150 02 Uen.

Capacity

System Telephones

The number of parking possibilities for system telephones is limited only by the number of traffic function keys, that is keys on which calls can be represented.

Analogue telephones

Analogue telephones can have one call only parked at a time.

Limitations

Parking is only possible in the speech state, that is of answered calls.

For trunk calls the call is always regarded as answered for incoming traffic and after end of selection for outgoing traffic if there is no answer indication.

Loudspeaker paging calls cannot be parked. An attempt to do so will result in disconnection of loudspeaker paging.

Parking is also permitted if an internal connection has been parked by the call partner.

A parked call that has not been reconnected within a programmable time recalls the parking extension.

However, recall will not take place as long as a call is ongoing via the telephone of the parking telephone.

Programming

2104
Recall individual parking

The time for recall of the parked party on system start is 60 s. This time can be reprogrammed for times between 0-255 s. If no recall is required, the time is set to 0.

Equipment

None.

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
SEA/TB/MP T.Preißner	SEA/TB/XE	403/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved	Kontr/Checked	Datum/Date / Rev	Tillhör/Referens-File/Reference
SEA/TB/MP		97-10-31 / B	ASB 150 02
		Database reference	
		403.fm	

PRIVATE TRUNK LINE

Definition

Private trunk line means that a trunk line can only be utilised by an identified extension.

Incoming traffic via the same trunk calls the extension directly, either as individual answering position or external line key. The line can be transferred freely to another party.

Use

A private trunk is used foremost when an extension user in an organisation (a company) has sufficient traffic to motivate his own trunk.

Like other trunks the private trunk can have multiple representation, e.g. on a secretary's telephone.

Operation

System telephones

Incoming call on external line key

The lamp for the programmed trunk key is showing rapid flash.

- Answer call by pressing key.
  Lamp flashes to confirm connection

Incoming call on Line 1

- If trunk has been inserted as individual answering position, answer call by pressing key to call traffic function for own number

Outgoing call via external line key

- Press programmed external line key.
  Lamp flashes to confirm connection.
  Dial tone received from public exchange

Outgoing call with directory number

- Dial directory number of trunk.
  Lamp flashes to confirm connection.
  Dial tone received from public exchange

Capacity

All trunks can be programmed as private trunks.

Limitations

A trunk that is to be available only to its "owner" for outgoing external traffic must be removed from route searching.

The trunk can be transferred to another party and is then inaccessible for its owner.

A private trunk line that calls own number can be diverted if it is not represented on an external line key.

Also a trunk that has been programmed as a private trunk line can be accessed if the individual directory number of the private trunk line is known.

All extensions possessing private trunk lines can form an own traffic group. This prevents the trunks from being accessed by extensions that do not possess private trunk lines.

Also private trunk lines are subjected to TCD-analysis and are dependent on the extension's category.

Programming

0301
Program function

An external line key needs to be programmed for the trunk.

```
10 Jul 14:40   +15°
FUNCTION OF KEY       0301 xxxx yy    zz
 backward  forward     c/i      return
```

xxxx Enter extension's directory number (1 - 4 digits)

yy Enter relevant key (00 - 48)

zz Enter function code = 12

Step to command 0302.

0302
Program trunk line number

```
10 Jul 14:40   +15°
ASSOCIATED NUMBER     0302 xxxx yy  zzzz
 backward  forward     c/i      return
```

zzzz Enter directory number of trunk

Step to command 0303.

0303
Program ring type

```
10 Jul 14:40   +15°
RINGING ALTERNATIVE   0303 xxxx yy     z
 backward  forward     c/i      return
```

z Enter type of ring signal (0 - 4)

The external line key can also be programmed via individual programming.
See document FACILITY DESCRIPTION - GENERAL (155 34-ASB 150 02 Uen).

Following command is only accessable via RASC:

3201
Route member's dir no

This command states which trunks are to belong to a route as well as the position of the trunk within the route. A trunk is removed from a route by erasing the value of the relevant directory number.
Before this command can be executed, the command for creating route access codes (5401) must have been executed.
On insertion of a trunk in a route the trunk has to be erased from its existing route (if one exists). This is of particular importance during installation when trunk 700 will automatically be assigned to the route with call number 0.

Equipment

None.

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
SEA/EBMP M.Plattner	SEA/EBAX/E	404/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved: SEA/EBMP	Kontr/Checked	Datum/Date: 98-05-29	Rev: D
		Database reference: 404.fm	Tillhör/Referens-File/Reference: ASB 150 02

PROGRAMMABLE AND FIXED KEYS

Definition

A *programmable key*
is a key on a system telephone that can be assigned various functions by programming.

A *fixed key*
is a key on a system telephone that is assigned a fixed function.

Use

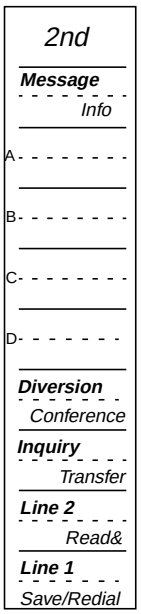
The fact that system telephones possess fixed and programmable keys enables each extension with such a telephone to be assigned precisely those functions that best benefit the extension.

Functions

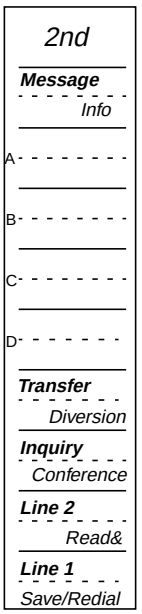
Fixed keys

For the ECONOMYplus, STANDARD and EXECUTIVE telephone the layout of the fixed keys can be selected from following possibilities (picture below shows only the first column):

business layout 1
(standard layout till ASB15002 R8)



business layout 2
(standard layout ASB15002 R8 and later)



NOTE for "business layout 2"
Although the Diversion key is on the second layer, the LED in case of diversion or follow me is active.

For the ECONOMYplus and STANDARD telephone also a special ACD-configuration can be programmed.

More information see ACD-AGENT, document 106/155 34-ASB 150 02 Uen.

Programmable keys:

Each programmable key can be assigned one of the following functions:

Name selection (= default function)

The possibility to store a 1 - 4 digit number for internal or external calls.

Suffix dialling key

The possibility to store a (any) postdialling digit.

External line key

The possibility to have a trunk represented directly on a key.

The lamp indicates whether the trunk is busy.

Supervision

The same function as name selection but, in addition, the associated lamp supplies information on the state (situation) of the monitored telephone.

Calls to the monitored telephone can be picked up by pressing the supervision key.

Conference key

Instead of using a procedure also a conference key can be programmed.

Intercom

A direct connection between two parties in the system via a designated key. Used foremost for executive/ secretary function.

Loudspeaker paging (=Voice paging)

Initiation of loudspeaker paging requires definition of one key per group.

Busy on line 2 key / Free on 2nd access

Is programmed if the extension wishes, temporarily, to prevent or to enable incoming calls on **Line 2**.

Not applicable for OPERATOR console.

Immediate answer

For activation and deactivation of immediate answer.

Not applicable for OPERATOR console.

Inquiry in a superior system (R-key)

Is programmed for extensions if the system functions as subexchange to a PBX or is utilised in a CENTREX-application.

Account code

Is programmed if, for outgoing traffic, an account number needs to be entered for printouts in conjunction with CIL (Call Information Logging).

Required only if the account number is to be entered during the call.

OPERATOR Hold key

The key can only be used by the OPERATOR console to park trunks. The same key is used to pick up the parked lines.

External voice mailbox key

When a voice message has been deposited in the external voice mailbox the associated lamp will flash rapidly.

Common hold key

To be able to use the function parking on common access the user need to program a key for this feature.

Not applicable for OPERATOR console

Transfer key

If the user wishes to avoid pressing two keys, a separate **Transfer**-key can be programmed (only necessary for business layout 1).

Not applicable for OPERATOR console

Save key / Redial key

If the user wishes to avoid pressing two keys, a separate **Save/Redial** key can be programmed.

Read&-key

If the user wishes to avoid pressing two keys a separate **Read&-**key can be programmed.

Not applicable for OPERATOR console

Enter-key

An extension doing a lot of programming may program a specific **Enter**-key in order to speed up the procedures otherwise using **2nd** and **#.**

MCID - key

This key is used in conjunction with the supplementary service MCID in order to initiate number tracing of the calling party in the ISDN.

Number secrecy - key

This key is used in conjunction with the supplementary service CIL_/COL_ in order to prevent the own number from being sent out to the public net during a call setup.

Common Mailbox Supervision - key

An extension that has access to a common mailbox should have this key for e.g. retrieving of messages from the common mailbox.

Logon Slave - key

This key is used in conjunction with the TANDEM function in order to logon/logoff the slave from the master telephone.

Slave supervision - key

This key is used in conjunction with the TANDEM function in order to have control of the slave extension.

Key functions for ACD-system:

Note that ACD-keys cannot be used on an OPERATOR console.

ACD-ready

Used in conjunction with ACD-function as **Log On- / Log Off**- key.

ACD-group key

An extension that is a member of an ACD-group must have one key per ACD-number to be answered.

ACD-supervision

A supervisor (agent) in an ACD-system can program a key for each supervised agent.

The associated lamp shows the current state (situation) of the supervised key.

ACD-clerical

An agent in an ACD-system can be assigned a key whereby he/she can indicate unreadiness to accept new calls.

ACD-help

Is used by an agent to attract the attention of the supervisor.

ACD-pause

Using the ACD-pause key the agent has the possibility to make a break without logging out. For leaving the pause status the agent needs to press the pause key again.

Operation

See respective facility in documents xxx/155 34-ASB 150 02 Uen.

Capacity

The number of programmable keys is for the:

- BASIC DBC 210 = 3
- ECONOMYplus DBC 211 = 4
- STANDARD DBC 212 = 4
- EXECUTIVE DBC 213 =14
- OPERATOR DBC 214 = 3
- KEY PANEL =17

Old telephones:

- BASIC DBC 199 = 0
- ECONOMY DBC 601 = 0
- ECONOMY DBC 751 = 0
- STANDARD DBC 631 =10
- STANDARD DBC 755 =10
- EXECUTIVE DBC 662 =30
- EXECUTIVE DBC 753 =30
- OPERATOR DBC 663 =20
- OPERATOR DBC 754 =20

Limitations

The functions of the programmable keys can be altered via system programming.

For the system it is also possible to state which functions shall be permitted for individual programming.

Programming

Fixed keys:

2081
Modified business key layout ?

This system command states if the "business layout possibility 1" or the "business layout possibility 2" is used for the system.

This command is only accessible via RASC.

valid data — YES
(= business layout possibility 2)

NO
(= business layout possibility 1)

default data — YES

0168
ACD key layout ?

This extension command states if the "business layout", like programmed in command 2081, or the special ACD key layout is used on the telephone.

This command is accessible via system telephone and RASC.

```
10 Jul 14:40   +15°
ACD KEY LAYOUT      0168    xxxx          z
 backward  forward     c/i       return
```

xxxx — Enter extension's directory number
z — Enter relevant function:
- 1 (= business layout)
- 2 (= ACD layout, with ACD clerical key)
- 3 (= ACD layout, without ACD clerical key)

default data — 1

NOTE: This command is only available on the ECONOMYplus and STANDARD telephone.

Programmable keys:

0201
Assignment of programmable keys

Each extension can be allocated different numbers of programmable keys.

```
10 Jul 14:40   +15°
NO OF PROG.KEYS       0201 xxxx         z
 backward  forward     c/i       return
```

xxxx — Enter extension's directory number
z — Enter number of keys:
- 0 = No programmable key (default data).
- 1 = 15 programmable keys
- 2 = 30 programmable keys
- 3 = 45 programmable keys
- 4 = 60 programmable keys
- 5 = 75 programmable keys
- 6 = 82 programmable keys

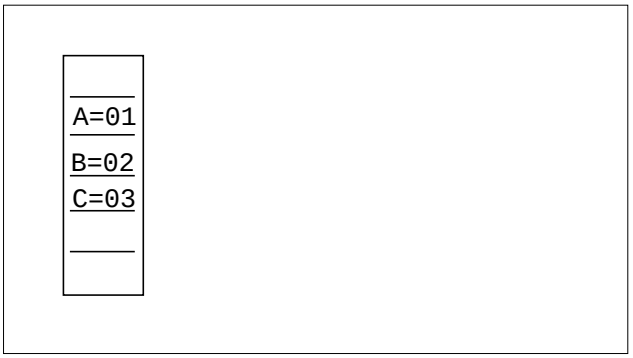
The allocation of keys has no connection to any specific type of telephone.
As a rule to use all keys on a specific telephone, program the following data:

BASIC	DBC 199		= 0
BASIC	DBC 210		= 1
ECONOMY	DBC 751		= 0
ECONOMY	DBC 601		= 0
ECONOMYplus	DBC 211		= 1
STANDARD	DBC 755		= 1
STANDARD	DBC 631		= 1
STANDARD	DBC 212		= 1
EXECUTIVE	DBC 753		= 2
EXECUTIVE	DBC 662		= 2
EXECUTIVE	DBC 213	NO KEY PANEL	= 1
EXECUTIVE	DBC 213	1 KEY PANEL	= 3
EXECUTIVE	DBC 213	2 KEY PANELS	= 4
OPERATOR	DBC 213	3 KEY PANELS	= 5
OPERATOR	DBC 213	4 KEY PANELS	= 6
OPERATOR	DBC 754		= 2
OPERATOR	DBC 663		= 2
OPERATOR	DBC 214	NO KEY PANEL	= 1
OPERATOR	DBC 214	1 KEY PANEL	= 3
OPERATOR	DBC 214	2 KEY PANELS	= 4
OPERATOR	DBC 214	3 KEY PANELS	= 5
OPERATOR	DBC 214	4 KEY PANELS	= 6

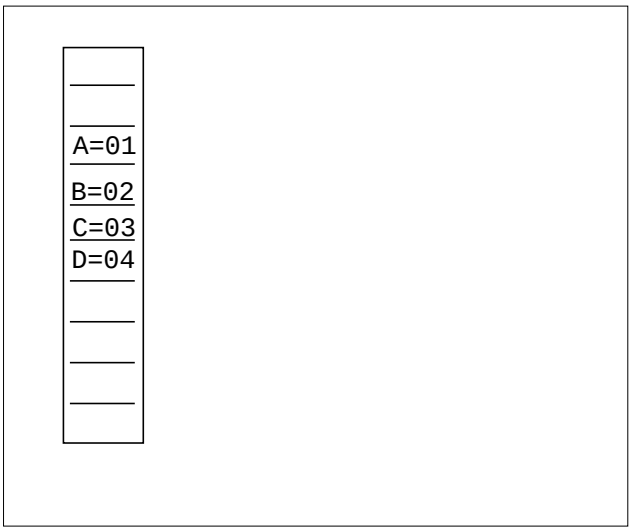
Numbering of keys

Programmable keys on system telephones are identified by a number 00 - 82.
On the figures below the number for an individual programmable key may be located.

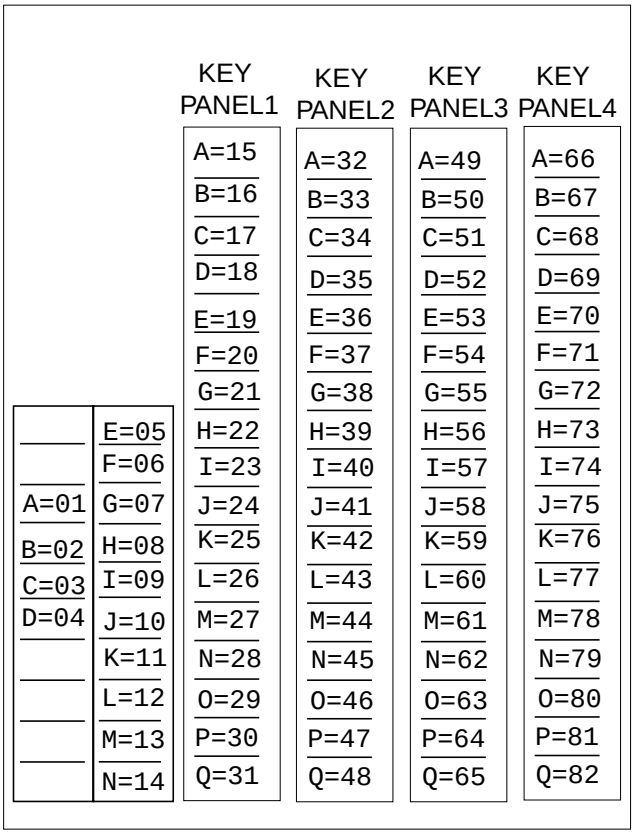
DBC210



DBC 211 and DBC 212

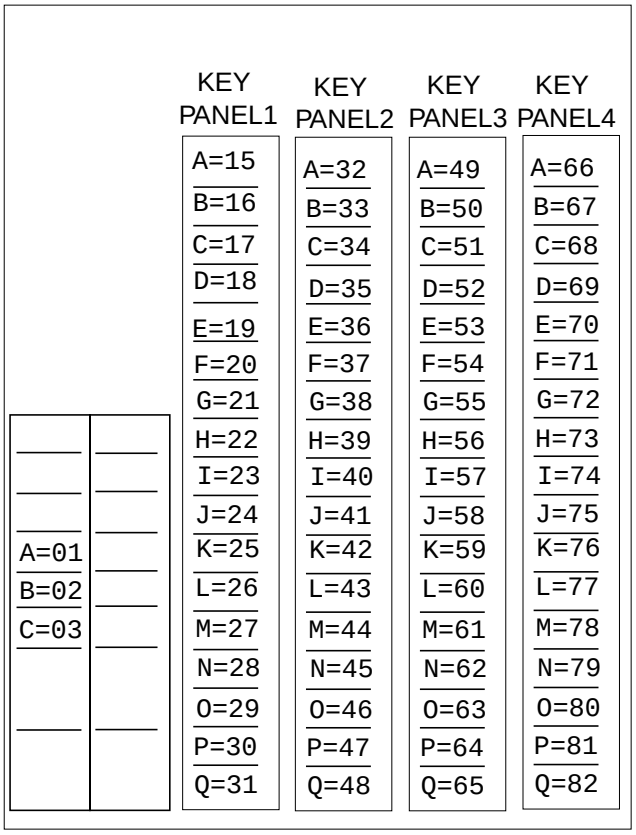


DBC 213

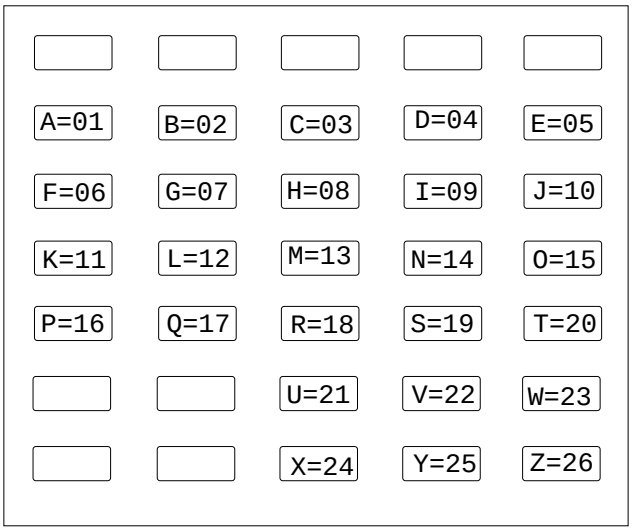


Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
		404/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved	Kontr/Checked	Datum/Date	Rev / Tillhör/Referens-File/Reference
		98-05-29	D

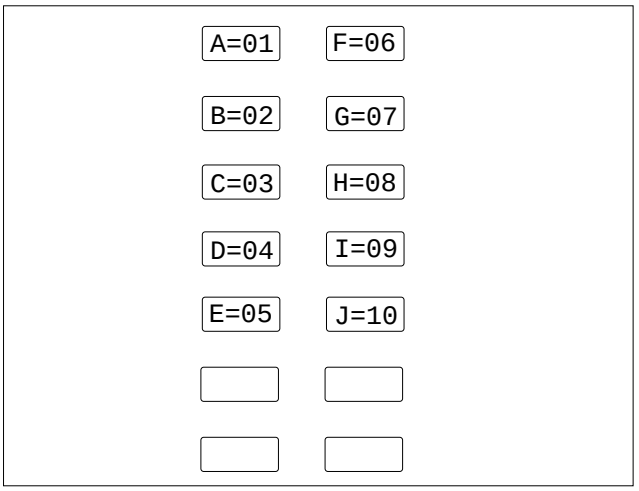
DBC 214



DBC 662, DBC 663, DBC 753 DBC 754



DBC 631, DBC 752 and DBC 755



0301
Key function

On initiation of the system, all programmable keys are assigned the function "name selection" (see below).

If a different function is required the key will have to be redefined.

```
10 Jul 14:40   +15°
FUNCTION OF KEY       0301 xxxx yy    zz
 backward  forward     c/i      return
```

xxxx	Enter telephone's directory number
yy	Enter relevant key number (00 - 82)
zz	Enter code for relevant function

See list below:

NAME SELECTION	= 10
SUFFIX DIALLING	= 11
EXTERNAL LINE	= 12
SUPERVISION	= 13
INTERCOM	= 14
VOICE PAGING	= 15
ACD GROUP	= 16
ACD SUPERVISION	= 17
COMMON MAILBOX-SUPERVISION	= 18
SLAVE SUPERVISION	= 19
R-key	= 25
BUSY LINE 2 / FREE 2ND ACCESS	= 26
CONFERENCE	= 27
IMMEDIATE ANSWER	= 28
ACD READY	= 29
ACCOUNT CODE	= 30
ACD CLERICAL	= 31
ACD HELP	= 32
OPERATOR - HOLD	= 33
EXTERNAL VOICE MAILBOX	= 34
COMMON HOLD	= 35
TRANSFER	= 36
SAVE/REDIAL	= 37
READ&	= 38
ENTER	= 39
NUMBER SECRECY	= 40
MCID key	= 41
LOGON/OFF SLAVE	= 43
ACD PAUSE	= 44

Individual Programming

It is possible to assign the individual extension the possibility to program his keys himself.

The scope of this possibility is determined by assigning the extension a facility category (COS) that includes the desired functions.

For individual programming,
see FACILITY DESCRIPTION,
document155 34-ASB 150 02 Uen).

Equipment

System Telephones.

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
SEA/TB/MP T.Preißner	SEA/TB/XE	440/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved	Kontr/Checked	Datum/Date / Rev	Tillhör/Referens-File/Reference
SEA/TB/MP		98-01-28 / B	ASB 150 02
		Database reference	
		440.fm	

RECALL

Definition

A call that has been:

- Parked
- Transferred before answer
- Camped on

can, recall the party who activated the function, if unanswered after expiry of a programmable time.

Use

The function ensures that a call which has been transferred before answer or camped on, will be dealt with if no reply is received within a programmable time.

Unanswered calls are directed to the party who extended the call.

Also individually parked calls initiate recall to prevent their being forgotten.

Operation

Recall

- Recalled call is presented on **Line 1** or **Line 2**.
  Lamp flashes rapidly.
  Ring signal is issued

Telephone with display shows:

EXECUTIVE Telephone

```
JOHNSON ANDREW              203
EXTERNAL                    703  CALLING
```

STANDARD Telephone

```
JOHNSON A     203
EXTERNAL      703  C
```

Example show that an external call extended to extension "203" has been rerouted back to the extending party.

When an extended but unanswered call recalls, the call remains with the called party until the recall is answered.

Recall after that a call has been parked

On recall after parking the display shows "RECALL" or "R" on second row to indicate a recall:

EXECUTIVE Telephone

```
10 Jul 14:40   +15°
JOHNSON ANDREW              203 RECALL
```

STANDARD Telephone

```
10 Jul 14:40   +15°
JOHNSON A     203  R
```

Answer

The recalled call is answered as follows:

- Press key for the call.
  Ring signal ceases.
  Lamp flashes to confirm connection

On a telephone with a display the following is shown:

EXECUTIVE Telephone

```
JOHNSON ANDREW              203
EXTERNAL                    705 SPEECH
```

STANDARD Telephone

```
JOHNSON A     203
EXTERNAL      705   S
```

Extended internal calls never initiate recall.

Recall of incoming external calls that remain unanswered after a programmable time are directed to:

- Alternative answering position for trunk if programmed

or

- placed as a call on all telephones that have the relevant trunk programmed on an external line key

Recall in conjunction with individual parking is always directed to the parking party.

Recall in conjunction with individual parking is signalled only when the telephone has no ongoing call.

Capacity/Limitations

No limitations on the number of recalls.

Programming

Following commands are only accessable via RASC:

2101
Recall parking

The time for recall can be programmed for times between 0-255 s.

If recall is not requred set time = 0.

2104
Recall individual parking

The time for individual parking can be programmed between 0-255s.

Recall is initiated only provided no other call is ongoing via the telephone.
If recall is not requred set time = 0.

1409
Time for recall on transfer before answer

This time is set per trunk.

The value 0 means 'no recall'.

1410
Time for recall on camp on

This time is set per trunk.

The value 0 means 'no recall'.

Equipment

None.

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
SEA/TB/MP T.Preißner	SEA/TB/XE	441/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved	Kontr/Checked	Datum/Date / Rev	Tillhör/Referens-File/Reference
SEA/TB/MP		97-10-31 / C	ASB 150 02
		Database reference	
		441.fm	

REFER BACK

Definition

The possibility to switch back and forth between two or more call partners for an unlimited number of times.

Use

Enables an extension user to maintain contact with several call partners by switching simply from one to the other.
The call partners can be both internal and/or external.

Operation

System Telephones

Refer back is preceded by inquiry.
Refer back cannot be initiated until the inquiree (person to whom inquiry is made) answers.
The relevant lamps on the telephone of the extension who undertakes parking flash slowly for those keys on which calls are parked.
Refer back is executed by pressing the key for the desired call partner.
The parked party is connected and the previously connected party will automatically be parked individually.
The user can now choose to recaccess any of the parties that are parked on her/his telephone.

Analogue telephones

Refer back is preceded by inquiry.
Refer back is not possible until the inquiree answers.
Refer back is initiated by pressing the **R**-button (on analogue telephones without **R**-button by dialling one pulse (digit) on the rotary dial).
The extension user receives dial tone and can now choose one of the following alternatives:

Digit 1 = Reaccess parked party.
Connected party is disconnected

Digit 2 = Refer back to parked party.
Connected party remains

Digit 3 = Three party call is initiated.
Parked party is connected to call.

See also CONFERENCE,
document 154/155 34-ASB 150 02 Uen.
If no digit is dialled within 3 seconds, dial tone will cease and refer back to the parked party ensues automatically.
The previously connected party will be parked automatically.
If digit **2** is dialled or if timeout takes place the refer-back procedure can be repeated an unlimited number of times provided the parked party does not go on hook.

Capacity

The number of ongoing calls on System Telephones is limited only by the number of traffic function keys.

Analogue telephones can only switch between two call partners.

Limitations

For refer back to be possible, an internal call must have been answered and the called party must remain on the line.

For external calls where no answer indication is obtained for outgoing calls "end of selection", that is digit transmission, must have been completed.

Programming

None.

Equipment

None.

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
SEA/TB/MP M.Plattner	SEA/TB/XE	445/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved: SEA/TB/MP	Kontr/Checked	Datum/Date: 97-10-31	Rev: A
		Database reference: 445.fm	Tillhör/Referens-File/Reference: ASB 150 02

REGISTER RECALL IN PSTN

Definition/Use

Inquiry, Refer back and Conference can be established on a system telephone without using a second external line.

Operation

By pressing the pre-programmed R-key on a system telephone, the following features are available:

- Inquiry on the same external line
- Refer back
- Conference

These features can be used on the same line, which is a great advantage as compared to the PBX functions, where always two external lines will be occupied for achieving the same functionality.

During suffix dialling, a TCD check that differs from the normal TCD check is performed.

Capacity/Limitations

The register recall can be done from all system telephones with programmable keys.

- BASIC DBC 210
- ECONOMYplus DBC 211
- STANDARD DBC 212
- EXECUTIVE DBC 213
- OPERATOR DBC 214

Old telephones:

- STANDARD DBC 631
- STANDARD DBC 755
- EXECUTIVE DBC 662
- EXECUTIVE DBC 753
- OPERATOR DBC 663
- OPERATOR DBC 754

Programming

0301
Program key

One of the programmable keys must be assigned the function recall signal.

Every extension that is to be able to undertake inquiries to the superior system must be assigned such a key.

```
10 Jul 14:40   +15°
FUNCTION OF KEY       0301 xxxx yy    zz
 backward    forward      c/i       return
```

xxxx	Enter extension's directory number
yy	Enter the respective key (00 - 48)
zz	Enter function code = 25

0179
TCD suffix dialling COS - day

This command states to which Trunk Call Discrimination table for suffix dialling during register recall to PSTN to which the extension belongs to when the exchange is day-switched.

The trunk number category controls which numbers the extension can dial.

See also command 0103 for more information.

0180
TCD suffix dialling COS - night

This command states to which Trunk Call Discrimination table for suffix dialling during register recall to PSTN to which the extension belongs to when the exchange is night-switched.

The trunk number category controls which numbers the extension can dial.

See also command 0104 for more information.

These commands are only accessible via RASC:

1417
Length of external inquiry signal

The length of the break in the loop that is sent to the superior system can be altered.

Initial data = 011.

2088
TCD suffix dialling at authority COS - day

This command states to which Trunk Call Discrimination table for suffix dialling during register recall to PSTN to which the extension belongs to when the exchange is day - switched and the authority code is activated.

The trunk number category controls which numbers the extension can dial. See commands 0103 and 2020 for more information.

2089
TCD suffix dialling at authority COS - night

This command states to which Trunk Call Discrimination table for suffix dialling during register recall to PSTN to which the extension belongs to when the exchange is night - switched and the authority code is activated.

The trunk number category controls which numbers the extension can dial. See commands 0104 and 2021 for more information.

Equipment

System Telephone.

A FECU must be connected to the CPU-D4.

REMINDER SERVICE

Definition

A reminder means that the system initiates ringing to the extension at an ordered time.

Use

The function can be used so that an extension user receives a reminder at a specific time.

This time can be stated in hours and minutes within the coming 24-hour period.

Operation

All telephones

To order reminder service

An order is placed by dialling the number of the reminder service facility and then stating the relevant time for the reminder.

***32 * 1430#**

If the order is accepted the ordering extension will hear verification tone.

If the order is rejected the extension will hear congestion tone.

The call number, ***32***, can be stored on a name selection key.

The user then needs only to state the time for reminder and press the #-key.

An order from a telephone with display is shown after the call number, ***32***, has been dialled:

EXECUTIVE Telephone

```
10 Jul 14:40   +15°
REMINDER TIME                    _
activate   clear              backspace
```

STANDARD Telephone

```
10 Jul 14:40   +15°
REMINDER TIME _
```

The extension enters the desired time of reminder and terminates with #.

Using **-**-key it is possible to erase the digit to the left of the cursor.

Cancel all reminders

It is possible to erase all ordered reminders via a command:

- **# 32 #**
- The extension hears verification tone.

The display shows:

EXECUTIVE Telephone

```
10 Jul 14:40   +15°
REMINDER CALLS CANCELLED
```

STANDARD Telephone

```
REMINDER CALLS
CANCELLED
```

NOTE: A reminder can only be erased from the extension user's own telephone.

Activation of reminder

When the time for an order reminder arrives, the extension will be rung with the same ring cadence as used for automatic callback.

- Call is presented on **Line 1** or **Line 2**
- Call can be answered in handsfree or handset mode
- Extension hears verification tone or voice message.

The ordering extension has ongoing diversion

If the extension has ongoing follow-me or diversion at time of the reminder, the reminder will be directed to the answering (divertee) position.

The ordering extension does not answer

If the extension does not reply within a programmable time, the call can be repeated a programmable number of times.

If no answer is obtained after the last attempt, the reminder will be cancelled.

The ordering extension is busy

If the extension is busy at the time of the reminder the call will be presented, if possible, on **Line 2**. Otherwise the call will be queued.

A call to a telephone with display will show the reminder time:

EXECUTIVE Telephone

```
10 Jul 14:40   +15°
REMINDER                  1440 CALLING
```

STANDARD Telephone

```
10 Jul 14:40   +15°
REMINDER    1440  C
```

After answer the following is shown:

EXECUTIVE Telephone

```
10 Jul 14:40   +15°
REMINDER                  1440 SPEECH
```

STANDARD Telephone

```
10 Jul 14:40   +15°
REMINDER    1440  S
```

If the reminder was ordered by an OPERATOR, the call will be placed in the call queue.

Capacity

The maximum number of concurrent reminders in the system is 100.

Each extension can order an optional number of reminders.

Limitations

Time can only be stated in 24-hour format: (HHMM).

An order can only be made for the nearest 24-hour period.

Orders are not possible from rotary dial (analogue) telephones.

A recorded voice message is common for all reminders.

In a configuration with programmed supervision keys it can be distinguish whether you are allowed to pick up a reminder call from another extension by a flashing supervision key LED.
If not, the supervision key will show steady light instead of flashing.

Programming

0101
Permitted to order reminder

Those extensions that are to be permitted to order reminders are to be assigned a facility category (COS) where the reminder service facility is open.

```
10 Jul 14:40   +15°
FACILITY COS          0101 xxxx       zz
 backward  forward     c/i      return
```

xxxx Enter extension's directory number

zz Enter relevant facility category (01 - 15)

3069
Program category list

```
10 Jul 14:40   +15°
REMINDER ORDERING     3069   xx  y
 backward  forward     c/i      return
```

xx Enter facility category 0 - 15

y Enter:
Y = reminder may be ordered.
N = reminder not allowed (default data)

Programming of reminder ring signal

The following functions can be set for reminder ringing.

8301
Ring time

States the permitted duration (number of seconds) for each reminder attempt.

```
10 Jul 14:40   +15°
REMINDER RING TIME    8301            zz
 backward  forward     c/i      return
```

zz Enter number of seconds (1 - 59).
Default data = 30

8302
Time that shall pass between two reminder attempts

```
10 Jul 14:40   +15°
REMINDER PAUSE TIME   8302             z
 backward  forward     c/i      return
```

z Enter number of minutes (1 - 5).
Default data = 3

8303
Number of reminder attempts

Here is stated the permitted number of reminder attempts before the reminder is erased.

```
10 Jul 14:40   +15°
REMINDER ATTEMPTS     8303             z
 backward  forward     c/i      return
```

z Enter number of reminder attempts (1 - 5).
Default data = 3

2036
Pickup RE/CB Block

Defines if call pickup of reminder or call back calls is blocked or not. (default = call pickup is not blocked)

To program a voice message for reminder

It is possible to record a voice answer to be played back when the reminder is answered.

Regarding the recording of a voice message, see also VOICE MESSAGE, document 522/155 34-ASB 150 02 Uen.

A voice answer number must have been created for the system.

5408
Create voice answers

The voice answer is affiliated to a directory number created by this command.

4701
State voice reference

The created voice answer directory number must be connected to the recorded voice message

```
10 Jul 14:40   +15°
VOICE ANSWER REF     4701 xxxx  y  uuvv
 backward  forward     c/i      return
```

xxxx	Enter created directory number
y	Enter 0
uu	Enter 01 = Voice message
vv	Enter recorded voice reference

8304
Connect voice answer to reminder function

This command is used to connect the voice answer number to the reminder function

```
10 Jul 14:40   +15°
REMINDER ANSW ANNO    8304          zzzz
 backward  forward     c/i      return
```

zzzz	Enter directory number of created voice message

Title of voice answer

If voice answer is employed, a text (title) should be entered for the voice answer number.

See also TELEPHONE DIRECTORY, document 481/155 34-ASB 150 02 Uen.

Key for reminder call

The call code, ***32***, can suitably be stored on a name selection key.

For programming, see also NAME SELECTION, document 360/155 34-ASB 150 02 Uen.

Equipment

Voice answer requires VMU-D /-HD boards.

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
SEA/EBBMP Pfleger H.	SEA/EBBX/E	443/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved / Kontr/Checked		Datum/Date / Rev	Tillhör/Referens-File/Reference
SEA/EBBMP		99-07-15 C	ASB 150 02
		Database reference	
		443.fm	

RING AND TONE SIGNALS

Definition

A ring signal is a signal to inform the recipient that a call is waiting.

On system telephones the ring signal is issued from a program-controlled tone ringer in the telephone.

On analogue telephones the ring signal is issued from a built-in bell that is driven by ring voltage from the extension board (ELU-A/MFU).

Tone signals are used to supply connection messages to the extension user.

Both ring signals and tone signals are determined by the specifications of the relevant market.

Use

A ring signal can be used in all situations when an incoming call is presented on a traffic function key.

Operation

None.

Capacity

Each traffic function key can be programmed for five different types of ring signal.

Ring and tone cadences for different markets are stored in EPROM.

Limitations

Only one call at a time can be ringing at each individual telephone.

If a system telephone is busy, that is a traffic function key shows busy indication, new calls on other traffic functions will automatically be announced by a single muted ring burst.

Programming

Ring signal diagrams

The ring diagrams are stored in an EPROM and can be selected via command.

2001
Ring signal scheme

The ring signal scheme controls the ring signals being sent to extensions. The ring signal scheme defines the type of ring signal to be used in different traffic cases and the cadence for each type of ring signal.

This command defines the ring signal scheme for the system.

Type of ring signal

The type of ring signal can be programmed for each individual traffic function key.

The ring signal type can be programmed either via system programming or individual programming.

For individual programming, see document FACILITY DESCRIPTION (155 34-ASB 150 02 Uen).

0303
Program type of ring signal

```
10 Jul 14:40   +15°
RINGING ALTERNATIV    0303 xxxx yy     z
 backward  forward     c/i      return
```

xxxx — Enter extension's directory number

yy — Enter selected traffic function key (00 - 48)

z — Enter relevant type of ring signal (0 - 5):
- 0 = Silent
- 1 = Periodic ringing
- 2 = Periodic ringing after 10 s. delay
- 3 = Only first ring period, muted
- 4 = Only first ring period, muted after delay
- 5 = Immediate answer (valid only for intercom, **Line 1** and **Line 2**)

If this type of ring signal is selected for other traffic functions this will be handled as if ringing type 1 had been selected.

0114 - 0115
Program type of ring signal for Line 1 and Line 2

It is possible to program also **Line 1** and **Line 2** for different types of ring signals

```
10 Jul 14:40   +15°
RINGING LINE 1        0114 xxxx       z
 backward  forward     c/i      return
```

xxxx — Enter extension's directory number

z — Enter type of ring signal (ring signals, see above)

Command 0115 for **Line 2** is handled in the same manner.

Equipment

None.

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
SEA/TB/MP T.Preißner	SEA/TB/XE	444/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved: SEA/TB/MP	Kontr/Checked	Datum/Date: 98-01-28	Rev: C
		Tillhör/Referens-File/Reference: ASB 150 02	
		Database reference: 444.fm	

ROUTE SELECTION

Definition

Simple route selection

Route selection means that an extension, by means of directory number automatically selects a free trunk for outgoing traffic.

All trunks that run to the same public exchange or other exchange are called "route".

Each route must be assigned a directory number.

Alternative route selection

Alternative route selection means that if there exist different paths to reach an addressee and if one path is blocked, the system can undertake reselection to another path.

Use

By dialling the route call number directly, the user can obtain a free trunk to the desired public exchange or to another exchange.

For alternative route selection the system will automatically select a trunk in the route that is first in the order of search.

If there is no free trunk in the normal route the system will attempt to select a trunk in an alternative route, if programmed accordingly.

Operation

All telephones

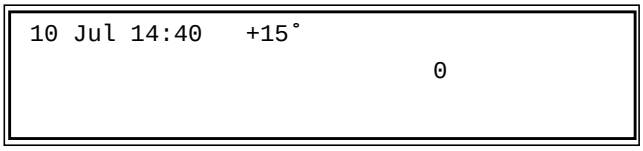
Free trunk available

An outgoing external call can be initiated by dialling the route's directory number on the key set or rotary dial.

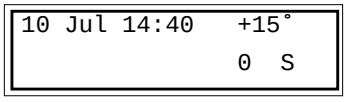
If a free trunk exists in the selected route, the caller will receive dial tone from the called system.

The display shows the dialled route number:

EXECUTIVE Telephone



STANDARD Telephone

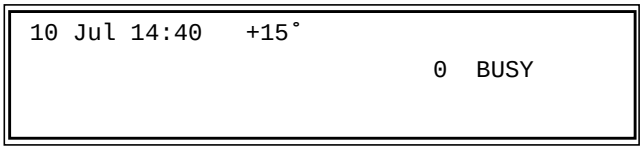


All trunks are busy.

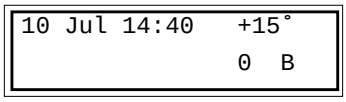
If there is no free trunk, the caller receives busy tone.

The display shows "BUSY" or "B":

EXECUTIVE Telephone



STANDARD Telephone



The caller can now select to terminate or to order callback to the route.

See AUTOMATIC CALLBACK - TRUNK/ROUTE, document 116/155 34-ASB 150 02 Uen.

Capacity

32 different public numbers can be assigned to the trunks. Up to 16 digits can be programmed per public number.
The maximum permissible number of routes is 256.

The maximum permissible number of trunks per route is limited to 46.

If the total number of trunks to one destination exceeds 46, it is recommended that the remaining trunks are programmed as incoming only.

The number of reselection possibilities for alternative route selection is two.

The maximum number of digits that can be added to the original number on reselection is 10.

Limitations

The possibility, from a certain extension or trunk, to access a desired route is determined by the traffic group matrix.

Trunks that are not placed in a route can only be accessed by dialling the individual directory number of the trunk or by pressing a programmed external line key.

Such a line can be utilised as a private trunk.

If so desired, a trunk can be included in several routes, for example in a private group network with fixed length numbering scheme where different first digits denote different exchanges but where all calls go to the same group of trunks.

Programming

On initiation of the system all trunks belong to the same route. The call digit (directory number) of this route is "0".

5401
Create route

Each new route must be created and assigned a directory number.

3301
Random selection ?

The search order in a new route uses the random selection principle but can be altered so that it always begins with trunk 1.

3201
Route members's dir no.

When a new route has been created it is necessary to program the trunks that are to be members of the route. This applies also when a new member is to be added to or deleted from an existing route.

3302
Callback allowed ?

If all trunks are busy extensions can order automatic callback - busy trunk.

5501
Delete route

An existing route can be removed via command.

5608
Alter route number

The existing directory number of a route can be altered.

Fixed lengh numbering scheme

3303
Predigits

The command is used to obtain a fixed length numbering scheme with fixed number length within e.g. a private group network. With this command a number of predigits can be programmed for transmission before the selected extension number.

Alternative routing

Two alternative routing possibilities can be programmed for each route. For each alternative routing possibility a number of digits can be stated that are transmitted before the keyed digits.

3304
Alternative route choice 1

To define the route via which alternative routing will take place requires that this route be stated for each relevant route.

3305
Predigits choice 1

State those predigits that are to be placed in front of the keyed number in the first alternative route.

3306
Alternative route choice 2

3307
Predigits choice 2

These commands are programmed in the same manner for alternative routing possibility 1.

Equipment

None.

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
SEA/TB/MP M.Plattner	SEA/TB/XE	460/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved: SEA/TB/MP	Kontr/Checked	Datum/Date: 97-10-31	Rev: C
		Database reference: 460.fm	Tillhör/Referens-File/Reference: ASB 150 02

SAVED EXTERNAL NUMBER REDIAL

Definition

Saved external number redial means that a dialled external number can be saved (stored) in a memory by depression of the key **Save/Redial**.

The saved number can later be retransmitted by depression of **Save/Redial**, when in idle state.

Use

The function is very practicable when a called public network subscriber does not answer or is busy. It is then possible to make repeated attempts without having to dial the number manually on each occasion.

Meanwhile the telephone can be used as normal when the number is stored.

Operation

BASIC Telephones

Save number

An extension saves a dialled number as follows:

- Press pre-programmed **Save/Redial**-key during a call attempt or during a call.
  Key depression does not affect ongoing calls or conversations

To retransmit saved number

- Press pre-programmed **Save/Redial**-key when telephone is idle
- System seizes **Line 1** or **Inquiry** and then selects free trunk by stored digits can be sent.

ECONOMYplus- and STANDARD Telephones

Save number

An extension saves a dialled number as follows:

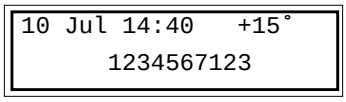
- Press **2nd**-key
- Press **Save/Redial** during a call attempt or during a call.
  Key depression does not affect ongoing calls or conversations

To retransmit saved number

- Press **2nd**-key
- Press **Save/Redial** when telephone is idle
- System seizes **Line 1**, **Line 2** or **Inquiry** and then selects free trunk by stored digits can be sent.

A telephone with display shows the transmitted digits:

STANDARD Telephone



EXECUTIVE Telephones

Save number

An extension saves a dialled number as follows:

- Press Menu-key **Save** (see display) during a call attempt or during a call.
  Key depression does not affect ongoing calls or conversations

To retransmit saved number

- Press Menu-key **Redial** (see display) when telephone is idle
- System seizes **Line 1**, **Line 2** or **Inquiry** and then selects free trunk by stored digits can be sent.

The display shows the transmitted digits:

```
10 Jul 14:40   +15˚
                  1234567123
                       save
```

Capacity

Each extension can save one external number with a maximum of 24 digits including intermediate tone(s) (if any) and area code.

Limitations

- Extensions equipped with Analogue telephones cannot save numbers.
- A saved number is stored until a new number is stored.
- If the number has been saved for a call via an external line key, retransmission takes place automatically via this external line key.
  If the trunk line is busy on this occasion, a busy message will be supplied.
- Retransmission of a saved number can only be activated from idle, internal or external register (dialling) state.
- A saved number is coupled to the telephone and cannot be activated from the answering position in the case of activated follow me or diversion.
- Nor can a saved number be accessed via authorisation code.
- **Save/Redia**l can be pressed at any time during an ongoing call and also afterwards.
- Dial tones must be marked out during number dialling by depression of Mute so that the system waits for these tones upon retransmission.

Programming

Separate key for Save/Redial

In oder to avoid pressing two keys it is possible to program a separate key for Save number redial.

```
10 Jul 14:40   +15˚
FUNCTION OF KEY      0301  xxxx  yy    zz
 backward    forward     c/i       return
```

xxxx	Enter extension's directory number.
yy	Enter selected programmable key (00 - 48)
zz	Enter function code = 37

Equipment

System Telephones.

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
SEA/EBMP M.Plattner	SEA/EBAX/E	461/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved / Kontr/Checked		Datum/Date / Rev	Tillhör/Referens-File/Reference
SEA/EBMP		98-05-29 C	ASB 150 02
		Database reference	
		461.fm	

SECRETARY FUNCTION

Definition

Secretary function denotes a combination of the system's facilities which, combined, provide the following traffic possibilities:

- A secretary can answer incoming calls for one or more executives and then extend the calls by single key depressions
- A secretary can intercept calls to the lines of one or more executives
- A secretary and an executive can access one another via single key depressions even if the respective line is busy
- An executive can divert all calls to the secretary
- A secretary can answer or initiate calls on an executive's private trunk line.

Use

The various parts of the secretary function can be utilised in many situations.

Supervision

A call that is signalled on the executive's telephone is also signalled on a programmable key on one or more secretary telephones.

Ring signalling at the supervision function can be selected individually:

- No ringing
- A muted ring signal
- Ring signal after 14 seconds

Diversion

By pressing the diversion key an executive can have all incoming calls diverted to a preselected secretary.

Diverted calls to a secretary can, if the secretary is absent, be diverted to another optional secretary, using the follow-me procedure.

Private trunk

An executive telephone or optional other telephone can be assigned a private trunk.

The line is represented on an external line key and, for supervision, can be represented on an optional number of secretary telephones.

This allows the secretary to answer calls on the executive's private trunk or undertake operator-assisted calls via this trunk.

Intercom

Executive and secretary can be assigned keys for a intercom between them.

Via a intercom the opposite party can always gain contact, even if both **Line 1** and **Line 2** are busy.

Operation

Secretary telephone

The secretary intercepts all calls to the executive.

Incoming calls on the executive's line are then diverted directly to the secretary.

The call is signalled directly on the secretary telephone's **Line 1** or **Line 2**.

The display shows, on the top row, that the call is intended for the executive telephone:

EXECUTIVE Telephone

```
JOHNSON ANDREW          203
EXTERNAL                703  SPEECH
```

STANDARD Telephone

```
JOHNSON A     203
EXTERNAL      703   S
```

The secretary answers the call by pressing the relevant key. If the secretary wishes to extend the call she presses:

- The intercom key to the executive
- When the executive answers the secretary extends the call by pressing **Transfer**
- The incoming call will then be presented on **Line 1** or **Line 2** of the executive's telephone

To answer calls on a private trunk

The call is signalled on both the executive telephone and secretary telephone.

When the secretary answers, the line is marked busy on the executive telephone.

If the secretary extends the call to the executive she presses the programmed **Hold**-key and then the intercom key to the executive.

When the executive answers, the secretary can inform her/him that a call is waiting on the external line key.

Ordered calls

By seizing the private trunk line, the secretary can make an ordered call on behalf of the executive and then extend the call in the manner described above.

Capacity

The number of secretary functions is limited only by the number of available programmable keys.

Limitations

Intercom to several secretaries requires separate keys on the executive telephone.

Programming

For each complete secretary function the following shall be programmed:

Secretary telephone

For each extension whose calls are to be intercepted by the secretary a key needs to be programmed for supervision.

0301
Define key

To facilitate a intercom between executive and secretary a key shall be programmed for intercom.

See also under INTERCOM LINE, document 266/155 34-ASB 150 02 Uen.

It is also recommended that the secretary has a programmed **Hold**-key

If the secretary answers and transfers all calls to the executives it is recommended that the secretary has a separate **Transfer** key programmed to speed up the procedure.

Executive Telephone

To facilitate direct communication with one or more secretaries a key for intercom shall be programmed for each secretary.

0301
Define key

The executive's directory number is programmed for direct diversion to the relevant secretary.

```
10 Jul 14:40   +15°
FUNCTION OF KEY       0301 xxxx yy    zz
 backward  forward     c/i      return
```

xxxx	Enter telephone's directory number
yy	Enter relevant key number (00 - 82)
zz	Enter code for relevant function

3082
Bypass call diversion.

This command specifies which ACOS (A-categories) are allowed to bypass call diversion and follow me.

```
10 Jul 14:40   +15°
BYPASS CALL DIVERSION ?  C  3082    xx     z
 backward    forward       c/i       return
```

xx — Enter ACOS value (value: 0-15)

z — Enter relevant function.
Y = Calling party with specified ACOS is allowed to bypass call diversion and follow me.
N = ACOS is NOT allowed to bypass call diversion and follow me. (Default data)

The secretary's telephone is programmed for the various diversion alternatives:

0109
Set activation of direct diversion

This command represents the actual state of the diversion key on the instrument.

```
10 Jul 14:40   +15°
DIRECT DIVERSION ?    0109 xxxx      z
 backward  forward     c/i       return
```

xxxx — Enter extension's directory number

z — Enter relevant function:
Y = Yes
N = No (default data)

0110
Program diversion on no reply for internal calls.

```
10 Jul 14:40   +15°
DIV.ON NO REPLY INT?  0110    xxxx      z
 backward  forward     c/i         return
```

xxxx — Enter extension's directory number

z — Enter function:
Y = Yes.
N = No

0111
State type of diversion on busy for internal calls

The extension must be programmed for diversion on busy for incoming internal calls

```
10 Jul 14:40   +15°
DIV.ON BUSY INT.?   0111   xxxx       z
 backward  forward     c/i       return
```

xxxx — Enter extension's directory number

z — Enter relevant function:
Y = Yes.
N = No (default data)

0112
State answering position

The answering position must be programmed.

NOTE: This must be the same for all types of diversions

```
10 Jul 14:40   +15°
DIVERSION ADDRESS    0112  xxxx    zzzzzzzz
 backward  forward     c/i       return
```

xxxx — Enter extension's directory number

zzzzzzzz — Enter answering position's directory number

0156
State type of direct diversion for incoming external calls

If incoming external calls should be diverted, command 0156 must be programmed.

NOTE: Valid only for DID-calls.
E.g.: Transferring an external call to an extension, which has activated "direct diversion for incoming external calls", will NOT be affected via this command.

```
10 Jul 14:40   +15°
DIRECT DIV EXT ?     0156    xxxx    z
 backward  forward      c/i     return
```

Enter extension's directory number

z — Enter relevant function:
Y = Yes
N = No (default value)

0157
Program diversion on no reply for incoming external calls.

```
10 Jul 14:40   +15°
DIV.ON NO REPLY EXT?  0157    xxxx    z
 backward  forward     c/i        return
```

xxxx — Enter extension's directory number

z — Enter function:
Y = Yes.
N = No

0158
State type of diversion on busy for incoming external calls

The extension must be programmed for diversion on busy for incoming external calls.

```
10 Jul 14:40   +15°
DIV.ON BUSY EXT.?   0158   xxxx      z
 backward  forward     c/i      return
```

xxxx — Enter extension's directory number

z — Enter relevant function:
Y = Yes.
N = No (default data)

0159
State type of direct diversion for internal calls

If incoming internal calls should be diverted, command 0159 must be programmed.

```
10 Jul 14:40   +15°
DIRECT DIV INT ?     0159    xxxx    z
 backward  forward      c/i     return
```

xxxx — Enter extension's directory number

z — Enter relevant function:
Y = Yes
N = No (default value)

0176
Call diversion to a CN number allowed ?

This command defines if an extension is allowed to activate call diversion to a private network number.

```
10 Jul 14:40   +15°
DIVERSION TO CN?     0176     xxxx     z
 backward  forward       c/i      return
```

Enter extension's directory number

z — Enter relevant function:
Y = Yes
N = No (default value)

2084
Type of network call handling

The command defines whether network call shall be handled as internal or external (tie line) calls with corresponding categories.

Example: Rerouting categories (on busy) for actual incoming trunk shall be deactivated (internal call handling) to enable proper 'call back on busy handling' from network side.

See also DIVERSION DIRECT,
document 165/155 34-ASB 150 02 Uen,

DIVERSION ON BUSY,
document 166/155 34-ASB 150 02 Uen and

DIVERSION ON NO REPLY,
document 167/155 34-ASB 150 02 Uen.

Equipment

Executive and secretary are to be equipped with EXECUTIVE Telephones to facilitate utilisation of handsfree calls.

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
SEA/TB/MP T.Preißner	SEA/TB/XE	462/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved: SEA/TB/MP	Kontr/Checked	Datum/Date: 97-10-31	Rev: C
		Tillhör/Referens-File/Reference: ASB 150 02	
		Database reference: 462.fm	

SUBSYSTEM

Definition

ASB150 02 used as subsystem means that the trunks in ASB150 02 are connected to analogue extension positions in a superior system PBX, key system, etc.

Use

The function is used when an existing larger system is to be complemented with one or more ASB 150 02 systems.

The function can also be used when the public exchange allows the ordering of facilities such as inquiry and transfer.

The function means that extensions in ASB 150 02 can initiate inquiry and transfer in the superior system.

Operation

Inquiry

Inquiry in the superior system is initiated by depression of the key programmed for the function.

A connected trunk in ASB 150 02 will then initiate a break that the superior system interprets as the recall signal.
The extension receives dial tone from the superior system and can then dial the required extension number.

Transfer

Transfer in the superior system is undertaken by replacing the handset.

NOTE: Renewed depression of the key will result in a new recall signal whose function is dependent on the superior system.
For continued operation, see the "Instructions for Use" applicable for the superior system.

Capacity

The number of trunks to the superior system is limited by the total number of trunks.
This number should not to exceed 60.

Limitations

As the scope of the facility is dependent on the ability of the superior system to interpret the register recall signals, it is first necessary to analyse how the extension positions in the superior system interprete signals.

NOTE: An inquiry to a superior system means that there will be no TCD-analysis in conjunction with number dialling.
An extension who has been assigned a key for inquiries to the superior system must be regarded as fully open for external traffic. Other TCD-analysis must be undertaken in the superior system.

Programming

0301
Program key

One of the programmable keys must be assigned the function recall signal.

Every extension that is to be able to undertake inquiries to the superior system must be assigned such a key.

```
10 Jul 14:40   +15°
FUNCTION OF KEY       0301 xxxx yy    zz
 backward  forward     c/i      return
```

xxxx	Enter extension's directory number
yy	Enter relevant key (00 - 48)
zz	Enter function code = 25

Following commands are only accessable via RASC:

1417
Length of external inquiry signal

The length of the break in the loop that is sent to the superior system can be altered.

Initial data = 011.

1018
Subsystem to PBX

The trunklines must be programmed as subsystem. Makes it possible to dial any digits to the superior system without digits being checked by the TCD.

Equipment

System Telephones.

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
SEA/EBBMP M.Plattner	SEA/EBBX/E	463/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved	Kontr/Checked	Datum/Date / Rev	Tillhör/Referens-File/Reference
SEA/EBBMP		99-07-15 / D	ASB 150 02
		Database reference	
		463.fm	

SUPERVISION

Definition

By programming an extension's directory number on a key, it is possible to activate the traffic function SUPERVISION and to undertake the following functions:

- Call the extension
- See the extension's telephone situation
- Answer calls to the extension

Use

By programming an extension's directory number on a key, the supervision feature allows the following options:

- As answer key for common call pick-up function
- Within a work group, in order to answer calls to other extensions in the group
- In secretary functions for mutual monitoring (supervision) of various directory numbers of executives and secretaries

Operation

System Telephones

Lamp characters

- Extinguished = Monitored party is free on both **Line 1** and **Line 2 ***
- Rapid flash = Call is presented to **Line 1** or **Line 2 *** for monitored party
- Steady glow = Monitored extension is busy on **Line 1** or **Line 2 ***

Own call to monitored party

- Press supervision key.
  One of traffic functions **Line 1**, **Line 2 *** or **Inquiry** is seized and its lamp flashes to confirm connection
- Ring control tone is heard

A telephone with display shows:

EXECUTIVE Telephone

```
10 Jul 14:40   +15°
JOHNSON ANDREW            203  FREE
```

STANDARD Telephone

```
10 Jul 14:40   +15°
JOHNSON A    203  F
```

If the supervision key is pressed for an extension that is busy on both lines, busy tone will be heard.

Pick up of calls

- Lamp for monitored party flashes rapidly
- Press supervision key.
  Picked up call is presented on one of free traffic functions **Line 1**, **Line 2 *** or **Inquiry**.
  Lamp for selected key flashes as, confirmation of connection.
  Supervision key's lamp extinguishes unless monitored extension has several unanswered calls.

The display shows:

EXECUTIVE Telephone

```
SMITH JOHN                205
JOHNSON ANDREW            203  SPEECH
```

STANDARD Telephone

```
SMITH J       205
JOHNSON A     203  S
```

The top row shows by whom the telephone was picked up.

The second row shows the conversation partner.

(* not available on the BASIC Telephone)

Capacity

The number of individual supervision functions is limited only by the number of available programmable keys with lamps.

• BASIC	DBC 210	= 3
• ECONOMYplus	DBC 211	= 4
• STANDARD	DBC 212	= 4
• EXECUTIVE	DBC 213	=14
• OPERATOR	DBC 214	= 3
• KEY PANEL		=17

Old telephones:

• BASIC	DBC 199	= 0
• ECONOMY	DBC 601	= 0
• ECONOMY	DBC 751	= 0
• STANDARD	DBC 631	=10
• STANDARD	DBC 755	=10
• EXECUTIVE	DBC 662	=30
• EXECUTIVE	DBC 753	=30
• OPERATOR	DBC 663	=20
• OPERATOR	DBC 754	=20

Limitations

- Extensions equipped with Analogue telephones cannot use this facility.
- For both call and answer, at least one of the traffic functions **Line 1**, **Line 2 *** or **Inquiry** must be free.
- Calls that are signalled on the supervision key include all calls to the monitored extension's directory number, that is on both **Line 1** and **Line 2 *** .
- A monitored extension is indicated as busy if either **Line 1**, **Line 2 *** or **Inquiry** is seized. This does not prevent calls from being initiated to the monitored extension's **Line 2 * ,** if this is free.
- The Supervision function on the DBC 210 is only available using an ELU-D3/MFU board or higher.
- The supervision of a PBX group with serial distribution will not be supported, however it will be supported with parallel distribution.

(* not available on the BASIC Telephone)

Programming

0301
Selection of key

The selected key on the system telephones must be programmed for supervision.

```
10 Jul 14:40   +15°
FUNCTION OF KEY       0301 xxxx yy    zz
 backward  forward     c/i      return
```

xxxx Enter extension's directory number
yy Enter selected key (00 - 48)
zz Enter function = 13
Step to command 0302.

0302
To program directory numbers

The directory number of the monitored (intercepted) party must be programmed

```
10 Jul 14:40   +15°
ASSOCIATED NUMBER     0302 xxxx yy  zzzz
 backward  forward     c/i      return
```

zzzz Enter monitored extension's directory number
Step to command 0303.

0303
To program ring signal

Here the type of ring signal is stated which is to be used for presenting the call.

```
10 Jul 14:40   +15°
RINGING ALTERNATIVE   0303 xxxx yy     z
 backward  forward     c/i      return
```

z Enter ring signal alternative (0 - 4)

Individual programming

Extensions equipped with System Telephones can program supervision themselves.

See also document
FACILITY DESCRIPTION - GENERAL
(155 34-ASB 150 02 Uen).

Equipment

System Telephone

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
SEA/TB/MP M.Plattner	SEA/TB/XE	464/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved: SEA/TB/MP	Kontr/Checked	Datum/Date: 98-01-21	Rev: A
		Database reference: 464.fm	Tillhör/Referens-File/Reference: ASB 150 02

SYSTEM PROGRAMMING

Definition

System Programming means that the various commands in the system are classified so that users with EXECUTIVE Telephones gain access to different volumes of commands dependent on the authorisation code they have access to (have been assigned).

Use

The extension user's facility category determines the extent to which an extension can undertake system programming. The extension's authorisation code determines which individual commands he/she may program.

Capacity

Each command can be assigned one of four authorisation levels.

Limitations

System programming is open for all extensions possessing the appropriate facility category. However, only one user at a time may be connected.

Programming

The following commands are only accessable via RASC:

5201
Password for level 0

When system programming is executed from a system telephone, the user can log in at different authority levels. The lowest level contains only some selected commands, while the highest level contains all commands of the system. The top level is the same level as the one used by RASC.
Using this command it is possible to determine the password for level 0.

This level is the lowest authorization level.

The password may consist of a maximum of 5 characters consisting of the letters A-Z and/or the digits 0-9.

5202
Password for level 1

When system programming is executed from a system telephone, the user can log in at different authority levels. The lowest level contains only some selected commands while the highest level contains all commands of the system. The top level is the same level as that used by RASC.

Using this command it is possible to determine the password for level 1.

This level is the second-lowest authorization level.

5203
Password for level 2

When system programming is executed from a system telephone, the user may log in at different authority levels. The lowest level contains only some selected commands while the highest level contains all commands of the system. The top level is the same level as the one used by RASC.

Using this command it is possible to determine the password for level 2.

This level is the second highest authorization level.

5204
Password for level 3

When system programming is executed from a system telephone, the user may log in at different authority levels. The lowest level contains only some selected commands while the highest level contains all commands of the system. The top level is the same level as the one used by RASC.

Using this command it is possible to determine the password for level 3.

This level is the highest authorization level.

Authorisation to undertake system programming

An extension that is to undertake system programming shall be assigned a facility category that allows programming.

3003
System programming

This command defines which A-categories are authorised to carry out system programming from a system instrument.

At first, all categories are open for programming.
NOTE: At least one category must be open.

0101
Facility COS

The command indicates which extensions will belong to a category permitting system programming.

Equipment

EXECUTIVE Telephone or OPERATOR Console.

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
SEA/EBMP M.Plattner	SEA/EBAX/E	480/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved	Kontr/Checked	Datum/Date / Rev	Tillhör/Referens-File/Reference
SEA/EBMP		98-05-29 / D	ASB 150 02
		Database reference	
		480.fm	

TANDEM CONFIGURATION

Definition

This document describes the interaction between two telephones (wired-cordless or wired-wired) working together as a unit.

Use

Users with a "master telephone" (e.g. a wired phone on the desk) and a "slave telephone" (e.g. portable phone) in a TANDEM configuration are treated as 1 logical unit.

This feature enhances the communication for users that, for example, have a wired phone on their desks and need to be mobile within their company's building having their own portable.

"The TANDEM operation

makes the wired telephone mobile"

Operation

General

The TANDEM configuration is a unit, consisting of two telephones using the same directory number. One of the telephones is defined as the "master" and the other one as the "slave".

Numbering plan and categorisation

Each directory number is independent with it's own parameters and COS (=Class Of Service).
If two directory numbers are working together as a unit, one has to be defined as a master and the other one as a slave.

Both telephones of the unit can be reached via the telephone number of the master (= the common directory number).

To keep up flexibility with different parameters and COSs, from the programming point of view, both master and slave are treated independent.

If the slave is assigned to a master, the slave is not reachable any more via it's own directory number. (This directory number and the related administrative data is hidden in the internal directory.)

The common directory number is always shown:

- On the LCD of the slave
- On the CIL records in case of active calls from the slave
- On the display of the called party in case of a calling slave
- In the A-number.

Traffic conditions

When during logon at least one of the two phones is busy, the common directory number will be marked as busy.

The following table shows how a call to a busy common directory number will be announced, depending on the logging case:

MASTER	SLAVE	LOGOUT	LOGON
busy	free	busy tone/ringing on Line 2	busy tone
free	busy	ringing on line1	busy tone
busy	busy	busy tone/ringing on Line 2	busy tone

In principle the TANDEM unit works as follows:

- for incoming calls, both telephones will be treated as 1 single extension.
- for outgoing calls, both telephones will be treated as 2 seperate extensions.

Important note:

Be sure always to create/change/delete the Slave directory number in RASC AND in the Cordless System Manager, especially when reconfiguring ASB 150 02.

There are two kind of TANDEM configurations

- Slave permanently logged on
- Slave temporary logged on

Slave permantently logged on

Via system command it is possible to define that the slave is permanently logged on.
(See chapter "Programming" in this document).

Incoming calls are always indicated on both telephones, the master ond the slave telephone.

Slave temporary logged on

The user of the TANDEM unit has the possibility to decide, whether incoming calls are presented only on the master (= slave logged off) or on both telephones (=slave logged on).

Via the Log on/off procedure the user can log on/off the slave.

The Log on / Log off procedure

Procedure for logging on

*28# or a programmed "Slave log on/off"-key.

If the slave is logged on, the LED of the "Slave log on/off" key shows steady light. The access for incomimg calls to second line will be blocked automatically and the corresponbding key "Busy Line 2" / "Free on 2nd access" depending on the programming shows steady light or extinguishes. The display shows:

EXECUTIVE telephone

```
10 Jul 14:40   +15°
SECOND USER LOGGED ON
 directory              redial      prog
```

STANDARD telephone

```
10 Jul 14:40   +15°
2nd USER LOGGED ON
```

Procedure for logging off

#28# or a programmed "Slave log on/off" key

By this simple procedure the slave can be set to "Log off" mode. During that mode the slave is blocked for incoming calls. Incoming calls will be indicated (only) on the master telephone.

During this logged-off period it is still possible for the slave to set up a call.

If the slave is logged on, incoming calls will be indicated - depending on the programming - on both telephones or only on the slave:

Ringing indication on master and slave while logon-state

Both telephones will receive the same ringing cadence (= the ringing cadence of the master). If the call is answered by one of the terminals, the ringing stops at the other telephone.

The TANDEM unit will be marked busy for incoming calls (In the logged-on period blocking of line 2 is always activated).

Ringing indication only on slave

To make incoming calls to the slave visible also for the master, it is possible on system telephones with programmable keys to programm a special "slave supervision key".

Transferring a call between the members of a TANDEM unit.

Depending on the type of telephone, the following procedure for transferring a call between the members of a TANDEM unit has to be executed.

- initiate inquiry
  (only necessary if there is no "supervise slave" key or "supervision" key of own common directory number available)
- dial own directory number or
  press the supervision key.
- transfer the call

Features

Abbreviated number dialling - common numbers

This feature is independent of the TANDEM unit. Master and slave can use the feature according to their individual categorisation.

For more information see document ABBREVIATED NUMBER DIALLING - COMMON NUMBERS, 101 / 155 34 - ASB 150 02 Uen

Abbreviated number dialling - individual numbers

This feature is independent of the TANDEM unit.

For more information see document ABBREVIATED NUMBER DIALLING - INDIVIDUAL NUMBERS, 102 / 155 34 - ASB 150 02 Uen

Account number

This feature is independent of the TANDEM unit.

For more information see document ACCOUNT NUMBER, 103 / 155 34 - ASB 150 02 Uen

ACD agent and supervisor

A TANDEM unit is not applicable for an ACD agent or supervisor.

For more information see document ACD-FACILITIES, 104 / 155 34 - ASB 150 02 Uen

Authorisation Code

Independent of the logged status and the orginator (master or slave) of this feature, the authorisation code is always related to the common directory number.

For more information see document AUTHORISATION CODE, 113 / 155 34 - ASB 150 02 Uen

Automatic callback

Independent of the logged status, the alerting of call back will always take place on the originator's phone.

For more information see document AUTOMATIC CALLBACK - BUSY/FREE EXTENSION, 115 / 155 34 - ASB 150 02 Uen

Call information logging (CIL) function

Independent of the logged status the common directory number is always used for the caller's number field in the CIL record.

For more information see document CALL INFORMATION LOGGING (CIL) FUNCTION, 140 / 155 34 - ASB 150 02 Uen

Call metering

The collected data of the TANDEM unit is associated to the common directory number. The read-out function is possible according to the relevant class of service for master and slave.

For more information see document CALL METERING, 141 / 155 34 - ASB 150 02 Uen

Call pick-up - common

This feature is independent from the logged status. It only depends on the number of the free programmable keys of the slave.

For more information see document CALL PICK-UP - COMMON, 142 / 155 34 - ASB 150 02 Uen

Call pick-up - individual

This feature is independent from the logged status.

For more information see document CALL PICK-UP - INDIVIDUAL, 144 / 155 34 - ASB 150 02 Uen

Call waiting indication

If one member of the TANDEM unit is engaged in a call, the common directory number shall be marked busy. If someone initiates camp on, the call waiting indication will be presented on following members of the unit:

Master	Slave	Call waiting indication
busy	free	to Master
free	busy	to Slave
busy	busy	to Slave

For more information see document CALL WAITING INDICATION, 145 / 155 34 - ASB 150 02 Uen.

Camp on

Independent of the logged status it is possible for the master and slave to initiate camp on to a busy extension as far this extension allows camp on.

For more information see document CAMP ON - INTERNAL CALLS, 148 / 155 34 - ASB 150 02 Uen.

Common bell

This feature is independent from the TANDEM unit.

For more information see document COMMON BELL, 151 / 155 34 - ASB 150 02 Uen.

Conference

Independent from the logged status it is possible for the master or slave to build up a conference. If one member of the TANDEM unit initiates a conference, it is also possible to include the remaining member in this conference.

For more information see document CONFERENCE, 154 / 155 34 - ASB 150 02 Uen.

Intercom

An intercom key can only be supported on the master phone.

For more information see document
INTERCOM,
266 / 155 34 - ASB 150 02 Uen.

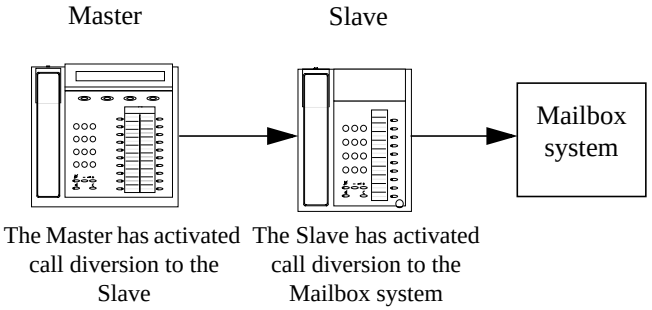
Diversion - direct

The activation of direct diversion from the slave always affects the common directory number, independent from the logged status.

If direct diversion is activated, both members of the TANDEM unit receive the special dial tone when they lift the handset.

For more information see document
DIVERSION DIRECT, 165 / 155 34 - ASB 150 02 Uen.

Note: In following configuration, command "0123 Repeated call diversion" has to be set to "Yes" for both extensions, the master and the slave.:


Master
Slave
Mailbox system
The Master has activated call diversion to the Slave
The Slave has activated call diversion to the Mailbox system

Diversion on no reply

Diversion on no reply always affects the common directory number.

For more information see document
DIVERSION ON NO REPLY,
167 / 155 34 - ASB 150 02 Uen.

Diversion on no reply to slave

In addition to the feature "Diversion on no reply" there is the feature "Diversion on no reply to slave".

After "Diversion time long" calls to the master will be rerouted to the slave.
If the slave answers the call the slave is automatically logged on, if not the slave remains in the logged off state.

If the slave is not logged on, "Diversion on no reply to slave" has always a higher priority than "Diversion on no reply".

Follow me

The activation of follow me from the slave always affects the common directory number, independent from the logged status.

If follow me is activated, both members of the TANDEM unit receive the special dial tone when they lift the handset.

For more information see document
FOLLOW ME, 202 / 155 34 - ASB 150 02 Uen.

Group (PBX) hunting

Only the common directory number has to be included in a PBX hunting-group.

For more information see document
GROUP (PBX) HUNTING,
220 / 155 34 - ASB 150 02 Uen.

Hotline

This function is independent of the TANDEM unit.

For more information see document HOTLINE,
240 / 155 34 - ASB 150 02 Uen.

Hotel guest extension

The function "Hotel guest extension" is always related to the common directory number.

HINT: In order not to confuse the guest with a display text like "2nd user logged on" we recommend to configure the TANDEM unit "Slave permanently logged on" !

Immediate answer

If the slave is logged on, an activated "Immediate answer" function is automatically deactivated.

For more information see document IMMEDIATE ANSWER, 260 / 155 34 - ASB 150 02 Uen.

Information system

Independent from the logged status, an activated information system always affects the common directory number.

If the info system is activated the Message/Info key shows steady light and the display shows the activated information on both instruments.

For more information see document INFORMATION, 263 / 155 34 - ASB 150 02 Uen.

Intrusion

If someone initiates intrusion, there will be a break in on following members of the TANDEM unit:

Master	Slave	Break in on
busy	free	Master
free	busy	Slave
busy	busy	Slave

For more information see document INTRUSION, 266 / 155 34 - ASB 150 02 Uen.

Key-system function

This feature is independent of the TANDEM unit and depends only on the programmed "external line keys".

For more information see document KEY-SYSTEM FUNCTION, 300 / 155 34 - ASB 150 02 Uen.

Last external number redial

This feature is independent of the TANDEM unit.

For more information see document LAST EXTERNAL NUMBER REDIAL, 320 / 155 34 - ASB 150 02 Uen.

Loudspeaker paging

This feature is independent of the TANDEM unit.

For more information see document LOUDSPEAKER PAGING, 322 / 155 34 - ASB 150 02 Uen.

Mailbox system

Independent from the logged status, messages can only be left in the mailbox of the common directory number. Both units, the master and the slave, are allowed to retrieve messages.

For more information see document MAILBOX SYSTEM, 340 / 155 34 - ASB 150 02 Uen.

Parking for common access

This feature is independent of the TANDEM unit.

For more information see document PARKING FOR COMMON ACCESS, 401 / 155 34 - ASB 150 02 Uen.

Private trunk line

If the external line key is programmed on the master or slave, it is possible to answer calls independent of the logged status.

For more information see PRIVATE TRUNK LINE, document 403 / 155 34 - ASB 150 02 Uen.

Recall following parking

Independent of the logging status, a recall is always indicated on the orginator of the previous process.

For more information see document
RECALL,
440 / 155 34 - ASB 150 02 Uen.

Reminder service

Independent of the logged status, an activated reminder service is always indicated on the orginator.

For more information see document
REMINDER SERVICE,
442 / 155 34 - ASB 150 02 Uen.

Saved external number redial

This feature is independent of the TANDEM unit.

For more information see document
SAVED EXTERNAL NUMBER REDIAL,
460 / 155 34 - ASB 150 02 Uen.

Secretary function

This feature is independent of the TANDEM unit.

For more information see document
SECRETARY FUNCTION,
461 / 155 34 - ASB 150 02 Uen.

Telephone directory

The telephone directory covers all master extensions. Slaves are excluded.

For more information see document
TELEPHONE DIRECTORY,
481 / 155 34 - ASB 150 02 Uen.

Tenant function

Master and slave of a TANDEM unit belong to the same tenant group.

For more information see document
TENANT FUNCTION, 482 / 155 34 - ASB 150 02 Uen.

Traffic group matrix

Master and slave of a TANDEM unit belong to the same traffic group.

For more information see document
TRAFFIC GROUP MATRIX,
484 / 155 34 - ASB 150 02 Uen.

Wake-up facility

Independent from the logged status, an activated wake up call is always indicated on the orginator's phone.

For more information see document HOTEL,
chapter "Wake-up facility",
241 / 155 34 - ASB 150 02 Uen.

Capacity

The total number of master and slave telephones depends on the max. capacity of the ASB 150 02 system and does not exceed 288 extensions, which means 144 TANDEM units (for more information see document 1555-ASB 150 02 Uen).

Limitations

It is not possible to include the following telephones in a Master-Slave-configuration:

- Operator's console
- ACD agent
- ACD supervisor

It is not possible to include 2 portables in a TANDEM-configuration.

Programming

5630
Assign slave extension number

After a cold start all extensions are initialised as "master". This command is used to link two extensions together as a TANDEM configuration.

After a slave has been assigned to a master, both extensions have the same common directory number. The common directory number is always the directory number of the master.

This command states which slave has been assigned to which master.

By default, no slave is assigned to a master.

As far the slave has been assigned to a master, some extension commands are out of function for the slave and marked out.

It is not allowed to define a guest extension as "slave" to avoid losing guest data in the hotel application.

HINT First the guest extension (command 0118) has to be set to NO.

0165
Diversion on no reply to slave

This command activates the diversion on no-reply.

```
10 Jul 14:40   +15°
DIV.ON NO REPLY SLA?   0165  xxxx        z
backward    forward      c/i      return
```

xxxx Enter common directory number

z Enter relevant function:
Y = Yes (default data)
N = No

0166
Slave always logged on

This command states whether the related slave should be permanently or temporarely logged on by the user via the "slave logon"-key or the procedure *28#.

```
10 Jul 14:40   +15°
SLAVE ALWAYS LOGON?   0166  xxxx        z
backward    forward      c/i      return
```

xxxx Enter common directory number

z Enter relevant function:
Y = Yes
N = No (default data)

NOTE: If this command is set to "YES", the ringing indication is <u>always</u> indicated on both telephones, independent of the programming of command 0167.

0167
Ringing indication on master and slave

This command states if , while the slave is temporarely logged on, the ringing indication should take place only on the slave or on both the master and the slave.
If it is programmed that the ringing indication should take place on both (master and slave) the type of ringing indication will be the same as has been programmed on the master.

```
10 Jul 14:40   +15°
RING ON MAST.&SLAVE?   0167  xxxx        z
backward    forward      c/i      return
```

xxxx Enter common directory number

z Enter relevant function:
Y = Yes (default data)
N = No

0172
Diversion on cordless not available internal

This command is used to activate diversion on not available for internal calls. Diversion on not available could be a result of a not attainable cordless.

If no diversion address is specified the diversion is inactive.

```
10 Jul 14:40   +15°
DIV NOT AVAIL INT.   0172  xxxx   zzzzzzzz
backward    forward      c/i      return
```

xxxx Enter common directory number

zzzzzzzz Enter diversion address

Note: After a call diversion "on not available" no repeated call diversion is possible any more.

0173
Diversion on cordless not available external

This command is used to activate diversion on not available for external incoming calls. Diversion on not available could be a result of a not attainable cordless.

If no diversion address is specified the diversion is inactive.

```
10 Jul 14:40   +15°
DIV NOT AVAIL EXT.    0173  xxxx   zzzzzzzz
backward    forward      c/i      return
```

xxxx Enter common directory number

zzzzzzzz Enter diversion address

Note: After a call diversion "on not available" no repeated call diversion is possible any more.

0301
Extensions - Programmable keys

Via this command a "logon slave" key and a "slave supervision" key can be programmed.

```
10 Jul 14:40   +15°
FUNCTION OF KEY   0301  xxxx     yy      z
backward    forward      c/i      return
```

xxxx Enter common directory number

yy Enter key number (00 - 82)

z Enter relevant function for current key.
default data: 10
Logon slave-key: 43
Slave-Supervision-key: 19

3053
Program LOGON/OFF SLAVE key

This command defines which ACOS-group (0-15) has facility access to allow programming a "logon/off slave"-key by individual programming.

```
10 Jul 14:40   +15°
PROG.LOGON/OFF SLAVE  3053    xx         z
backward    forward      c/i      return
```

xx Enter ACOS value (0-15)

z Enter relevant function:
Y = Yes
N = No (default data)

3054
Program SUPERVISE SLAVE key

This command defines which ACOS-group (0-15) has facility access to allow programming a "supervise slave"-key.

```
10 Jul 14:40   +15°
PROG.SUPERVISE SLAVE  3054   xx        z
backward    forward      c/i      return
```

xx	Enter extension's directory number
z	Enter relevant function: Y = Yes N = No (default data)

GENERAL NOTE:

When removing a portable, assigned as a slave, from a TANDEM configuration, be sure to delete the extension number of the portable telephone also in the DECT-system.

Equipment

None.

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
SEA/EBBMP M.Plattner	SEA/EBBX/E	481/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved	Kontr/Checked	Datum/Date / Rev	Tillhör/Referens-File/Reference
SEA/EBBMP		99-07-15 / D	ASB 150 02
		Database reference	
		481.fm	

TELEPHONE DIRECTORY

Definition

Telephone directory is a list of telephone numbers consisting of two parts:

- **int**ernal directory that includes directory numbers with the corresponding names, such as:
  - Trunk number
  - Extension number
  - Fictive number
  - Group number
  - Voice answer number
  - ACD-group number
  - predefined directory number
- **ext**ernal directory that handles all common abbreviated numbers.

Use

It is possible to search by name through the internal or external telephone directory for a directory number, and to call them directly.

It is not possible to search through the internal telephone directory for information referring to the external telephone directory.

The directory number information shown on the display can be organized in fields with different significances.

Searching in the directory book can take place in any field or in combinations of fields, for example searching by name, by surname, or by name and surname.

In order to be shown in the directory book, the directory numbers have to have an assigned name string and the visibility parameter must be set.

In conjunction with the function "DISA with password control" it is a must that all extensions having access to the DISA function are also available in the directory book.

Printout

The function allows to print out the whole telephone directory in alphabetic order.

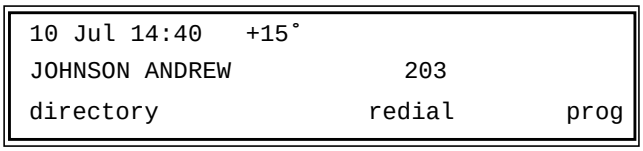
Operation

In idle state the display (if any) of each extension will show only the two first fields' information of the corresponding directory number.

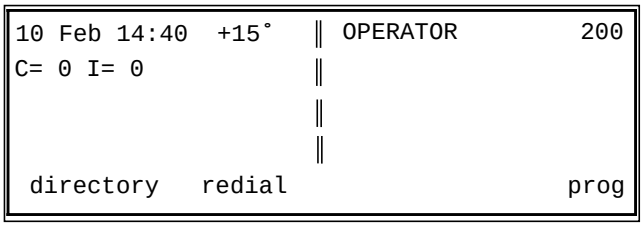
In cases of long information in these two fields (of course less than 35 characters altogether), the telephone sets with a 40-characters display will show just the first 20 characters; the telephone sets with a 20-characters' display will show just the first 12 characters.

The telephone directory can be used if the **"directory"** option is shown in the menu line of the display:

EXECUTIVE Telephone



OPERATOR's Console



Searching

By pressing **directory**-key (F1) the display shows:

EXECUTIVE Telephone

```
10 Jul 14:40   +15˚
JOHNSON ANDREW            203
internal   external              return
```

OPERATOR's Console

```
10 Feb 14:40  +15˚   ‖
C= 0 I= 0            ‖
                     ‖
                     ‖
 internal   external              return
```

internal = internal directory
external = external directory

At this step you can choose between internal and external dir. by pressing the corresponding menu key.

Search criteria

It is possible to scroll through the whole of the telephone directory or to search for a certain character or combination of characters. The result is a limited number of records that will serve as a basis for another search if desired/needed. You can search in a certain field or in a combination of fields.

Searching through the directory records

After choosing the searching area (internal or external directory) the procedure continues as follows:

Press **search**-key of the menu.
The display shows the first record (in alphabetic order) stored in the surname's field.

EXECUTIVE Telephone

```
10 Jul 14:40   +15˚
WHITE ANDREW         SALES            253
 backward   forward     call      disconn
```

OPERATOR's Console

```
10 Feb 14:40  +15˚   ‖
C= 0 I= 0            ‖
                     ‖
 WHITE ANDREW        SALES            253
  backward   forward     call      disconn
```

backward = Scrolls to the previous name
forward = Scrolls to the next name
call = Calls displayed directory number
disconn = Quit

A warning tone will be heard at the end of the records list.

Searching for the first character in the field

After choosing the searching area (internal or external directory) the display shows:

EXECUTIVE Telephone

```
10 Jul 14:40   +15˚
TELEPHONE DIRECTORY - ENTER SEARCH KEY
                          search    disconn
```

OPERATOR's Console

```
10 Feb 14:40  +15°   ‖
C= 0 I= 0            ‖
                     ‖
 TELEPHONE DIRECTORY - ENTER SEARCH KEY
                          search    disconn
```

Enter the relevant character (or combination of characters) at the first position in the field, i.e. you want to search through the names starting with "B".

Press **search**-key

The display shows the first record to start with the selected character or combination of characters (in our case with B).

EXECUTIVE Telephone

```
10 Jul 14:40   +15°
BOSSI   ROSA          SALES          345
backward    forward     call      disconn
```

OPERATOR's Console

```
10 Feb 14:40  +15°   ‖
C= 0 I= 0            ‖
                     ‖
 BOSSI   ROSA          SALES          345
 backward    forward     call      disconn
```

backward = Scrolls to the previous name

forward = Scrolls to the next name

call = Calls the current directory number

disconn = Quit

A warning tone will be heard at the end of the records list.

NOTE: In order to shorten the searching procedure you can enter more than one character to search for.

Searching in other fields

For example, if you want to find a person working in a certain department you can proceed as follows:

Press "**+**" key to mark the next field.

	TECHNICAL NAME	KEY	KEY
EXECUTIVE	DBC 213	+	-
EXECUTIVE	DBC 662	SAVE	2'nd
EXECUTIVE	DBC 753	READ	DIAL
OPERATOR	DBC 214	+	-
OPERATOR	DBC 663	SAVE	2'nd
OPERATOR	DBC 754	IDEN.	DIAL

Enter the search character(s) and press **search**-key. The display now shows the first person (the first alphabetically) working in that department

EXECUTIVE Telephone

```
10 Jul 14:40   +15°
BRAUN KLAUS           DESIGN         234
 backward   forward    call       disconn
```

OPERATOR's Console

```
10 Feb 14:40  +15°   ‖
C= 0 I= 0            ‖
                     ‖
 BRAUN KLAUS           DESIGN         234
 backward   forward    call       disconn
```

backward = Scrolls backward

forward = Scrolls forward

call = Calls displayed directory number

disconnect = Quit

Searching in some fields simultaneously

When searching for a certain person it can be easier to state the first surname letter in the surname field and the first name letter in the first-name field.

Example:

To search for Johnson Andrew.

- key "**J**" for surname
- enter one space to jump in the third field
- key "**A**" for first-name
- press **F3 (search)** (**Enter** is also possible for OPERATOR) to start searching

The system now shows the first person with the above mentioned combination:

EXECUTIVE Telephone

```
10 Jul 14:40   +15°
JOHNSON ANDREW      DESIGN            342
backward     forward     call     disconn
```

OPERATOR's Console

```
10 Feb 14:40  +15°   ‖
C= 0 I= 0            ‖
                     ‖
 JOHNSON ANDREW      DESIGN            342
  backward   forward     call      disconn
```

backward = Scrolls backward

forward = Scrolls forward

call = Calls displayed directory number

disconnect = Quit

No record fulfils the search criteria.

For both telephones the display shows:

```
10 Jul 14:40 +15°
 SORRY - NO SUCH NAME
                                  return
```

F4 (return) = Returns to the step of entering the search characters.

To end the search procedure, press **F4 (disconn**-key).

Capacity

The **internal directory** has a maximum of 400 available positions for directory records.

Each directory record can consist of a maximum of 35 characters name-strings which can be organized in an optional number of fields.

Two fields are standard:

- Surname
- First name

The **external directory** has a maximum of 450 positions for common abbreviated numbers' records.

Each directory record consists of a 35 characters name-string, which can be organized in an optional number of fields.

Limitation

Because of the storage capacity limitations only 15 simultaneous connections to the internal directory are possible.

For the same reason only 11 simultaneous connections to the external directory are possible.

User defined characters cannot be sent in case of external calls, but they will be converted into " - " characters.

Programming

It is possible to assign a 35 characters' information to the directory number, structured in different fields, if so desired. This applies for both the internal and the external telephone directory.

6501
Administration data internal

After entering the command, the display shows:

```
10 Jul 14:40   +15°
ADM. DATA INTERNAL      6501            >
 backward   forward               return
```

Press **Enter**.

The display shows:

```
10 Jul 14:40   +15°
ENTER DIR. NO                        xxxx
                      pf_3      return
```

xxxx Enter the relevant directory number

Press **Enter**.

The display shows:

```
10 Jul 14:40   +15°
_                                    xxxx
 backward  forward    pf3       return
```

xxxx Enter the relevant directory number

Press **Enter**.

Then enter the relevant (desired) information; with a maximum of 35 characters.
Each field will be defined by one space.

backward	Scrolls backward to precursor directory number
forward	Scrolls forward to next directory number
pf_3	returns to previous display
return	returns to command entering display

The display shows:

```
10 Jul 14:40   +15°
JOHNSON ANDREW                        234
 backward  forward    pf_3      return
```

At the end of each entry, press **Enter** and the cursor moves to the directory number field.
You can enter now a new directory number and the corresponding information in the same way as mentioned above.

Press **Enter**.

The display shows:

```
10 Jul 14:40   +15°
VISIBLE?                             xxx
 backward  forward    pf3       return
```

xxx	yes	directory number is displayed
	no	directory number is hidden

6510
Administration data external

After entering the command, the procedure is the same as for internal directory records but the information here refers to the common abbreviated numbers.

6502
List internal data

This command is only accessable via the Telephone.

This command is used to obtain a printout of the internal telephone directory via a connected printer.

```
10 Jul  14:40  +15°
LIST INTERNAL DATA      6502      zzzzz
 backward      forward              return
```

zzzzz Enter type of data records to be printed out.

ALL	All data records will be printed out including guest room extensions
GUEST	Only guest room extensions information will be printed out
DIR	Only non-guestroom extensions information will be printed out.

6511
List external data

This command is only accessable via the Telephone.

This command helps to printout the external telephone directory via a connected printer. After entering the command the display shows:

```
10 Jul  14:40  +15°
LIST EXTERNAL DATA          6511       zzzz
 backward      forward                return
```

zzzz Enter type of data records to be printed out.

ALL see command 6502

DIR see command 6502

6601
Administration data ext./ trunk

This command is similar to 6501 but it lists only extensions and trunks.

```
10 Jul 14:40   +15°
ADM. DATA EXT/TRUNK   6601    xxxx
backward  forward                return
```

xxxx Enter extension or trunk directory number

The display shows:

```
10 Jul 14:40   +15°
ADM. DATA EXT/TRUNK   6601 203          >
backward  forward                 return
```

> Press **Enter** to show the relevant information for the current number

You will get the desired information on the display.

```
10 Jul 14:40   +15°
nnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnn
                                  return
```

nn..n Data record, a maximum of 35 characters.

Press **F4** for return.

Equipment

The function requires an EXECUTIVE Telephone or an OPERATOR's Console.

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
SEA/TB/MP T.Preißner	SEA/TB/XE	482/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved	Kontr/Checked	Datum/Date / Rev	Tillhör/Referens-File/Reference
SEA/TB/MP		97-10-31 / C	ASB 150 02
		Database reference	
		482.fm	

TENANT FUNCTION

Definition

Tenant function means that several individual organisations and/or companies (tenants) can share the same telephone system.

Use

The function can be used e.g. for industrial parks or office blocks containing several tenants.

ASB 150 02 can be split whereby each company/ organisation (tenants) conceives its part of the system to be a private system.

The following functions can be split:

Number series

Only one number series, but each tenant can be assigned optional numbers from the common number series.

For example:

Tenant 1 has number series 100 - 199

Tenant 2 has number series 300 - 349

Tenant 3 has number series 400 - 559

Trunks

Each tenant can be assigned its own trunks.

For outgoing traffic the system automatically selects its own trunks.

The different tenants can also have common trunks.

Each trunk can for example be given the tenant's name. A common OPERATOR can then, for incoming calls, on inquiry or recall identify to which company the trunk belongs and answer using the appropriate tenant name.

NOTE: However in the case of a common DID-route it is not possible to differentiate between calls on diversion to the operator.

Grouping of extensions

Internal traffic between extensions belonging to different tenants is normally blocked if each company has its own trunks.

PBX-positions

Each tenant can handle its incoming traffic individually.

However only three tenants can have their own OPERATOR Consoles.

Other tenants must then utilise an EXECUTIVE Telephone as answering position or, by controlling traffic as a key-system, utilise the common call pick-up or ACD function

It is also possible to allow two or more tenants to use common OPERATORs.

In this case for incoming calls the OPERATOR receives information directly as to which tenant the call is for and can provide the appropriate reply.

Abbreviated number dialling - common numbers

The common abbreviated numbers can be assigned categories whereby they can only be accessed by users possessing the same category.

This means that four companies can be assigned own abbreviated numbers from the total list.

Trunk Call Discrimination

The list of approved destinations can be programmed so that it is stated for each destination which of the eight categories it is to be checked (analysed) against.

Each tenant can then open an optional number of the programmed directions.

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
		482/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved	Kontr/Checked	Datum/Date	Rev / Tillhör/Referens-File/Reference
		97-10-31	C

Facilities

By means of programming the facility category list and assigning facility categories to the various tenants each tenant can gain access to the desired number of facilities.

Background music

Tenants can be assigned an individual music channel, however the maximum is three channels.

Loudspeaker paging

Up to eight different paging groups can be programmed so that each tenant then has its own group.

Night service

Each tenant can switch its own trunks for night service by a command.

It is however always possible, via one key, to switch the entire PBX for night service.

Call Metering

By connecting a peripheral postprocessing unit, detailed information can be obtained for each tenant that is a member of the PBX.

Operation

See description of respective facility, document xxx/155 34-ASB 150 02 Uen.

Capacity

A maximum of sixteen tenants can share one system.

This number can be smaller dependent on the configuration.

See "Limitations" below.

Limitations

The number of tenants that can share one system is dependent on the prerequisites stipulated for traffic control and facilities.

Traffic control

The maximum number of tenant groups in the system is 16.

The maximum number of traffic groups in the system is 8.

For example, if each tenant is to have its own trunks but nevertheless allow traffic between extensions, only eight tenants can be permitted, as extension group and trunk line groups must be assigned different traffic group categories.

Abbreviated number dialling - common numbers

The common external abbreviated numbers can be shared among a maximum of four tenants.

Trunk Call Discrimination

The number of accessible directions is 100.

If the PBX is divided into the maximum number of groups (eight), all extensions in one tenant must be subjected to the same restrictions.

OPERATORs

If the tenants are to have their own OPERATOR Consoles, it is necessary to state the console's individual directory number as answering position for trunks.This means that there will be no common queue to the OPERATORs.

Programming

When programming a system to be used by several companies, you must keep in mind the following information:

Traffic group matrix

Must always be programmed in order to prevent inter-tenant traffic and where tenants are to be assigned own trunks for outgoing traffic.

Directory numbers

To be programmed only if the original number series for extensions is to be altered, for example, if each tenant is to be assigned a certain segment of the available number series.

Trunk Call Discrimination

Must be programmed with regard to the split of the extensions among the various tenants.

Abbreviated number dialling - common numbers

To be programmed only if the common abbreviated numbers are to be split among the tenants.

2801
Short number open for tenant

This command defines which tenants are allowed to use the selected short number series.

```
15 Apr 14:40   +15°
OPEN FOR TENANT?     2801   xxxx    yy   z
 backward  forward    c/i          return
```

xxxx Enter the short number

yy Enter the tenant number

z Enter required function:

Y=Tenant opened

N=Tenant not opened

Answering position for trunk

Must always be programmed if tenants are to have different answering positions or if the answering position is equipped with an OPERATOR Console.

Night service

Shall always be programmed.

It is to be noted in particular whether each tenant that shares the PBX shall itself be able to switch its own trunks for night service.

Background music

To be programmed only if one or more of the involved tenants is to have music channels.

Administrative data

6801
Tenant password

This command can be used to define a password of 1 to 16 digits for a given tenant group which allows access to a specific tenant group when doing call metering activities. Tenant groups are needed, if several customers want to share one ASB150. They can separate their extensions and trunks into a maximum of 16 tenants.

Equipment

None.

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
SEA/TB/MP T.Preißner	**SEA/TB/XE**	**483/155 34-ASB 150 02 Uen**	
Dokansv/Godkänd - Doc respons/Approved	Kontr/Checked	Datum/Date / Rev	Tillhör/Referens-File/Reference
SEA/TB/MP		**98-11-18** **B**	**ASB 150 02**
		Database reference	
		483.fm	

TEXT MODE

Definition

Text can in certain modes be entered from the EXECUTIVE Telephone and the OPERATOR Console.

Text is entered via the key pad.

Use

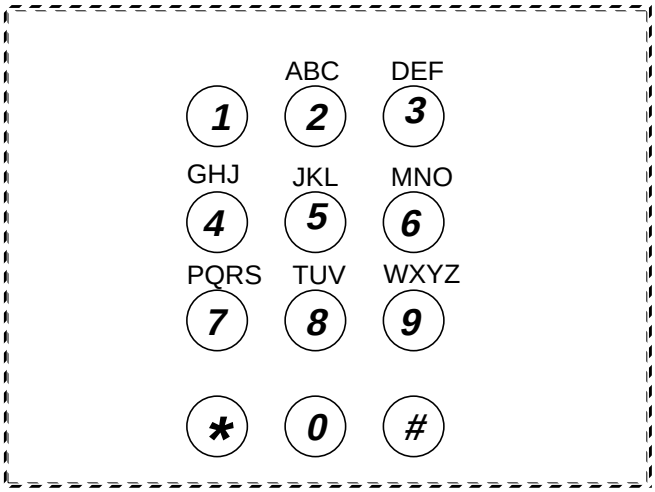
Text can be entered in the following cases:

- TEXT INFORMATION
- TEXT MESSAGE
- TELEPHONE DIRECTORY
- HOTEL RECEPTION.
  See document HOTEL,
  document 241/155 34-ASB 150 02 Uen.
- SYSTEM PROGRAMMING.
  See document FACILITY DESCRIPTION
  (155 34-ASB 150 02 Uen)

Operation

In those modes in which writing is permitted this is indicated by a cursor on the display.

In the text mode the keys on the EXECUTIVE Telephone possess the key functions shown below.



Key **2** - **9** can be used for the letter **A** - **Z**

Each key has 3 or more letters allocated to the key.

National characters can be found behind the **1**-key.

Special characters **. , ! ?** are found behind the ***** -key.

+-key is used to step to next position or for space.

--key is used to erase the digit under the cursor.

When a key is pressed in the text mode, the leftmost letter will be shown on the display.

If the key is pressed a second time, the next letter will appear. When the key is pressed after the rightmost letter the digit for the key is shown

If a new key is pressed the cursor will automatically move to the next position.

If one wants to write two letters subsequently on the same key the **+**-key must be pressed between the two letters.

Some examples:

- indicates consecutive depressions of the same key

, indicates that a new key is pressed

To write "JOHN" the following keys have to be pressed:

5,6-6-6,**4-4,6-6**

To write "ROSS":

7-7-7,**6-6-6,7-7-7-7,+,7-7-7-7**

Capacity/Limitations

None.

Programming

None.

Equipment

EXECUTIVE Telephone or OPERATOR Console.

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
SEA/TB/MP T.Preißner	SEA/TB/XE	484/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved / Kontr/Checked		Datum/Date / Rev	Tillhör/Referens-File/Reference
SEA/TB/MP		98-01-28 / B	ASB 150 02
		Database reference	
		484.fm	

TRAFFIC GROUP MATRIX

Definition

The traffic group matrix is an aid for opening up or restricting traffic between different extensions and/or trunks in the system.

Use

The traffic group matrix must be programmed if any of the following restrictions are required in the system.

- Extensions shall be prevented from calling groups of trunks, for example, a specific route.
- Certain extensions shall be prevented from accepting calls from groups of trunks, or incoming trunks accessing outgoing trunks.
- Prevention of calls between groups of extensions in hotels or when the PBX is shared byseveral companies (Tenant function).

Operation

An extension who attempts to call a party who is blocked in the traffic group matrix meets congestion tone.

The display shows "BLOCKED" or "NB":

EXECUTIVE Telephone

```
10 Jul 14:40   +15˚
                          20  BLOCKED
```

STANDARD Telephone

```
10 Jul 14:40   +15˚
               20  NB
```

Reading the number (amount) of open extensions

By entering a command, on a STANDARD - or EXECUTIVE Telephone or OPERATOR Console, it is possible to read off how many extensions in the system are open for traffic to the public network, and how many are restricted from connection to the public network.

- From idle.
  Key command ***93#**

The display shows:

EXECUTIVE Telephone

```
10 Jul 14:40   +15˚
TRUNK ACCESS          OPEN:119  RESTR: 64
```

STANDARD Telephone

```
TRUNK ACCESS
 OPEN:119  RESTR: 64
```

Press **Clear** to return to idle state.

Capacity

The traffic group matrix can handle a maximum of 16 groups of extensions and/or trunks.

Limitations

Group 0 means that extensions/trunks possessing this category are always open for calls to all other extensions/trunks irrespective of their categories.

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
		484/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved	Kontr/Checked	Datum/Date / Rev	Tillhör/Referens-File/Reference
		98-01-28 B	

Programming

To program extensions in the traffic groups

On initiation of the system all extensions are assigned traffic category 0, which means that there are no traffic restrictions.

Which extensions are to be included in which traffic groups can be specified via programming.

If traffic is to be limited, it is necessary to assign one of the traffic categories 1 - 15 to the respective extensions.

0102
Program traffic group category for extension

```
10 Jul 14:40   +15°
TRAFFIC GROUP          0102 xxxx       zz
 backward  forward     c/i      return
```

xxxx	Enter extension's directory number
zz	Enter selected traffic group category (0 - 15)

Following commands are only accessable via RASC:

1002
Traffic group

Programming traffic categories for trunks

2301-2315
Traffic group matrix

The traffic group matrix is to be programmed so that the desired traffic can be obtained.
For each calling traffic group state its availability for other traffic groups.

On initiation of the system all traffic groups are open = Y.

If any direction is to be blocked for a certain traffic group N = no must be programmed.

Equipment

None.

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
SEA/TB/MP M.Plattner	SEA/TB/XE	485/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved: SEA/TB/MP	Kontr/Checked	Datum/Date: 97-10-31	Rev: D
		Database reference: 485.fm	Tillhör/Referens-File/Reference: ASB 150 02

TRANSFER

Definition

Internal or external calls can be transferred to another party.

Transfer can be done before or after answer.

Transfer can also take place to a busy extension.

See also under

CAMP ON - INCOMING EXTERNAL TRAFFIC,
document 146/155 34-ASB 150 02 Uen,

CAMP ON - INQUIRY,
document 147/155 34-ASB 150 02 Uen and

CAMP ON - INTERNAL CALLS,
document 148/155 34-ASB 150 02 Uen.

Use

The transfer function is used among other things for the simplified OPERATOR function, when the OPERATOR uses an EXECUTIVE Telephone, to extend an incoming external call.

Transfer can also be utilised by normal extensions when it is desired that someone else shall take over an ongoing call.

If transfer is effected before answer, time supervision is started. If no answer is obtained before the programmed time expires the transferring party will be recalled.

See also RECALL,
document 440/155 34-ASB 150 02 Uen.

Operation

System Telephones

- Transfer begins with inquiry
- Transfer request is made by pressing
  - Transfer or
  - going on hook (replacing handset).
  Lamps for both inquiry call and parked call extinguish.
  Extension encounters silence in handset or handsfree mode

Analogue telephones

- Transfer begins with inquiry
- Transfer request is made by extension going on hook (replacing handset)

If transfer is forbidden

- *Transfer via pressing the transfer-key*
  The key depression will be ignored and the established speech connection remains.
- *Transfer via on hook*
  The party who initiated transfer will be recalled by the previously connected party.

Capacity

Not applicable.

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
		485/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved	Kontr/Checked	Datum/Date	Rev / Tillhör/Referens-File/Reference
		97-10-31	D

Limitations

If there are several individually parked parties, the party who was parked last will be transferred.

Transfer is possible only to a party who, according to the traffic group matrix, can be interconnected to the parked party.

If none of the two conversation parties can provide a clear signal, the call will be cleared down automatically after 2.5 minutes.

To be able to transfer a call, the called party's **Line 1** or **Line 2** must be free.

A transferring party is charged for the outgoing external call until the called party answers.

It is not possible to transfer 2 external parties via on hook from a system telephone, but by pressing the Transfer-key.

Programming

0101
Facility COS

Default data permits transfer before answer.

If transfer before answer is to be prevented it will be necessary to assign a facility category to this function.

Those extensions that are forbidden to transfer before answer are assigned the selected facility category.

```
10 Jul 14:40   +15°
FACILITY COS          0101 xxxx       zz
 backward  forward     c/i      return
```

xxxx	Enter extension's directory number
zz	Enter relevant facility category (0 - 15)

3002
Program facility category list

This command states whether or not the facility categorisation allowes transfer before answer.

default data YES

For programming of the facility category list, see also CATEGORISATION,
document 149/155 34-ASB 150 02 Uen.

Program a separate key for transfer

0301
Function of key

For users extending many calls it is advisable to program a separate **Transfer**-key.

This command is only relevant for the business layout 1.
See document PROGRAMMABLE AND FIXED KEYS, 404/155 34-ASB 150 02 Uen.

```
10 Jul 14:40   +15°
FUNCTION OF KEY       0301 xxxx yy    zz
 backward  forward     c/i      return
```

xxxx	Enter extension's directory number.
yy	Enter selected programmable key (00 - 48)
zz	Enter function code = 36

2082
Transfer via onhook

This feature is always active for R-key instruments. This system command states if Transfer via onhook should be active for system telephones, too.

default data YES

Equipment

None.

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
SEA/TB/MP T.Preißner	SEA/TB/XE	486/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved	Kontr/Checked	Datum/Date / Rev	Tillhör/Referens-File/Reference
SEA/TB/MP		97-10-31 / D	ASB 150 02
		Database reference	
		486.fm	

TRUNK

Definition

A trunk (external line) is a physical connection between ASB 150 02 and its environment.

Trunks can be analogue or digital.

Trunks are used particulary for:

- Lines to the public exchange
- Lines to a superior PBX

Analogue trunks can also be used for:

- Music/information source for music on hold and background music
- External paging equipment

Analogue trunks

Analogue trunks (eight units per board) are used mainly for connection to old, analogue public exchanges.

Analogue trunks are also used for the connection of paging equipment and music sources.

To minimise distortion on lines due to impedance mismatches the feature **A**utomatic **T**runk **I**mpedance **A**daption (**ATIA**) can be enabled via RASC for each trunk and tie line. This function adapts to the best possible impedance balance automatically.

Command 1033 can only be envoked if command 1032 is enabled. This feature must not be used on lines where the connected terminals already have a selfadapting functionality e.g. modems, fax mashines etc.

Digital trunks

Digital trunks are used for connection to modern, digital public exchanges. The following digital trunks are supported by ASB 150 02

- 2Mb/s CAS trunk (30 channels)
- 2Mb/s ISDN trunk (30 channels)
- 192kb/s ISDN trunk (2 channels)

For further information about ISDN-trunks,
see document 268 / 155 34-ASB 150 02 Uen

Directory numbers

On system start, each trunk is assigned automatically a directory number from 700 and upwards.

Routes

Several trunks that go to the same terminal point and that are to be called with the same directory number can be placed in one route. 32 different public numbers can be assigned to the trunks. Up to 16 digits can be programmed per public number. On initiation all trunks are placed in route 0.

See also under "ROUTE SELECTION",
document 444/155 34 ASB 150 02 Uen.

Use

See also under "OUTGOING EXTERNAL CALLS",
document 381/155 34 ASB 150 02 Uen
and "INCOMING EXTERNAL CALLS",
document 262/155 34 ASB 150 02 Uen.

Operation

See also under "OUTGOING EXTERNAL CALLS",
document 381/155 34 ASB 150 02 Uen
and "INCOMING EXTERNAL CALLS",
document 262/155 34 ASB 150 02 Uen.

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
SEA/TB/MP T.Preißner	SEA/TB/XE	487/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved	Kontr/Checked	Datum/Date / Rev	Tillhör/Referens-File/Reference
SEA/TB/MP		97-10-31 / C	ASB 150 02
		Database reference	
		487.fm	

TRUNK CALL DISCRIMINATION (TCD)

Definition

Using Trunk Call Discrimination = TCD it is possible to determine (program) to which area (routing number) codes the extensions shall be permitted to ring.

Also incoming trunks can be checked.

Permitted area codes are placed in a table that, for outgoing external traffic, is compared with the number dialled by the extension and the extension's external number category.

Use

TCD provides the possibility, in a flexible manner, to restrict the possibilities of extensions to make expensive calls.

Operation

For outgoing external calls each dialled digit is compared with those number intervals that, are to be checked in accordance with the extension's or trunk's external number category.

The check is made according to the following rules:

- Dialled digit exists in the table.
  No more digits are to be checked.
  THE DESTINATION IS OPEN, TCD IS DISCONNECTED
- Dialled digit exists in the table.
  More digits are to be checked.
  WAIT FOR MORE DIGITS
- Dialled digit is not in the table.
  THE DESTINATION IS BLOCKED.
  The trunk will be disconnected and marked free.
  The direction is blocked for the caller who receives congestion tone

Capacity

Permitted destinations are stored in a table compiled on the basis of number intervals.

A number interval can be two arbitrary digit combinations, where digit combination 1 must always be lower or equal to digit combination 2.

Example of number intervals

- 1 - 6
- 71 - 79
- 01234 - 01238
- 00942 - 00942

If a number interval is programmed as 2 - 4, this means that all destinations that begin with 2, 3 or 4 are open.

100 number intervals (00 - 99) can be programmed.

Each number interval can have a discrimination depth of up to ten digits.

Extensions and trunks can be assigned one of nine TCD-categories (0 - 8) for day traffic and night traffic. If an extension or a trunk is assigned category 0 this means that no check will be undertaken.

For each number interval is stated which of the TCD-categories 1 - 8 shall be compared with the interval.

When the system is switched for night service, the check (comparison) is made against those intervals that correspond to the night service categories, otherwise against the day service categories.

Limitations

Extensions belonging to group 0 are fully open for external traffic, that is they are not subjected to TCD-analysis.

External numbers not entered in the table are blocked for all extensions except those with category 0.

Calls made with the help of common abbreviated numbers are not checked by the TCD, whereas individual abbreviated numbers are.

Programming

0103 - 0104
Categorisation of extensions

The extensions can be divided into:

- Nine external number categories for day traffic (0 - 8)
- Nine external number categories for night traffic (0 - 8)

Default data for extensions and trunks is group 0 for both day category and night category (COS), that is the extensions are open for all traffic.

```
10 Jul 14:40   +15°
TCD-DAY COS           0103 xxxx        z
 backward  forward     c/i      return
```

xxxx — Enter extension's directory number

z — Enter relevant day category (0 - 8).
Step to command 0104

```
10 Jul 14:40   +15°
TCD-NIGHT COS         0104 xxxx        z
 backward  forward     c/i      return
```

xxxx — Enter extension's directory number

z — Enter relevant night category (0 - 8).

Categorisation of trunks

For transit traffic an incoming trunk can be assigned external number categories in the same manner as extensions.

2201
Program the TCD-table

Each opened number interval needs to be programmed (entered) in the TCD-table

```
10 Jul 14:40   +15°
OPEN NO_INTERVALS     2201   xx        >
 backward  forward     c/i      return
```

xx — Enter destination's sequence number (0 - 99)
Press **Enter**

```
10 Jul 14:40   +15°
START=               END=
 backward  forward     c/i      return
```

START= — Enter lowest number in interval (1 - 10) digits

END= — Enter highest number in interval (1 - 10) digits

Step to the next destination and repeat procedure.

2202 - 2209
Open/blocked for category

For each programmed number interval those TCD-categories that are to be analysed in the interval are to be programmed.

```
10 Jul 14:40   +15°
OPEN FOR TCD-COS 1    2202   xx        z
 backward  forward     c/i      return
```

xx — Enter sequence number for destination (0 - 99)

z — YES = Category is open for destination
NO = Category is blocked for direction
Default value = NO

Step through commands 2203 - 2209 and repeat the above procedure.

Example

In a company a group of extensions shall only be allowed to call selected national area codes.

041, 042, 043, 044, 045, 046, 047, 048, 049, 062, 063, 081

The extensions are assigned category (COS) = 1.

Another group shall be permitted to call all national area codes but be blocked for international traffic.

The extensions are assigned category (COS) = 2.

The third group is allowed to call anywhere.

The extensions are assigned category (COS) = 0.
Local numbers begin with 1 - 9.

National area codes are in the interval 011 - 099.

The prefix for international traffic = 001.

The table is programmed as below.

Note that category = 0 need not be programmed per interval, it is always open.

INTERVAL	FROM	TO	COS 0	COS 1	COS 2
00	1	9	X	X	X
01	011	040	X		X
02	041	049	X	X	X
03	050	061	X		X
04	062	063	X	X	X
05	064	080	X		X
06	081		X	X	X
07	082	099	X		X

Following commands are only accessable via RASC:

1003
TCD-day COS

The command states to which trunk call analysis category the trunk belongs when the exchange is day-switched.

(Command 1004 is used to control to which trunk call analysis category the trunk belongs when the exchange is night-switched.)

The trunk call analysis controls which numbers the extension may dial for outging calls.

In case of calls the trunk call category of the outgoing trunk controls which numbers the incoming trunk may dial.

Trunks (and extensions) can be divided into nine different trunk number categories. Category 0 is open for all numbers while the digits are checked for categories 1-8

1004
TCD-night COS

In the case of transit traffic an incoming trunk line can be assigned external number categories in the same way as extensions.

1015
Predigits for TCD and LCR

This command is used to assign routes and their members a number which may be used for number analysis. This parameter will be used primarily by TCD and LCR.
The number given should contain 1 - 4 digits.

TCD:

The number is used when an exchange has routes to other exchanges with completely or partly identical number series, to decide whether the calling party is entitled to make outgoing calls on that particular route.

Using command group 22, a number of routes (trunk numbers) may be opened for traffic. For each direction it is decided which of the TCD-categories 1-8 shall be open for the respective direction.

LCR:

This parameter is used to identify the direction of an outgoing line (trunk or tie line), i. e. to which network it is connected - a public network, a private network or a separate carrier network.

There is no rule which predigits have to be programmed. However, for all lines connected to the same network the same predigits have to be programmed.

These predigits are only used for this network. For all lines connected to another network other predigits have to be programmed.

Example:

We have two trunks connected to a public network (700, 701).
Additionally we have a tie line to a PABX-A (702).
And finally we also have two tie lines to a PABX-B (703, 704).

Line	!	Predigits
700	!	00
701	!	00
	!	
702	!	505
	!	
703	!	7777
704	!	7777

Equipment

None.

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Capacity

The maximum number of trunks is determined by the number of voice channels (60) .

32 different public numbers can be assigned to the trunks. Up to 16 digits can be programmed per public number.

Analogue trunk boards: maximum 7 boards (56 lines).

Digital 30B+D trunk boards: maximum 2 boards (60 lines).

Digital 2B+D trunk boards: maximum 3 boards (24 links=48 lines).

Limitations

When dimensioning the system ensure that the number of trunks is in proportion with the number of available voice channels and also to the relationship between internal and external traffic.

In case of trunk to trunk connection and
using Line Signals (command 1201)
06 (Australia, standard) or
21 (Standard with detection of disconnection tone)
the maximum time the caller is connected to the desired party is 10 minutes.

Programming

Each trunk line can be programmed for adaptation to a connected public exchange or other PBX.

NOTE Adaptation of transmission, line signalling and system times requires excellent knowledge of ASB 150 02 and the relevant signal diagram.

On system level we define a table with up to 32 different public numbers (command 2220) which will be used in case of outgoing calls. One public number per number group. In addition the type of the programmed number has to be specified (national, subscriber, ...). Which number type has to be sent out depends on the public network. With the information on the individual trunk about the dedicated trunk number group it is possible to find the corresponding public number in the table. Finally the opposite parties directory number will be added.

2220
Public directory numbers

Up to 32 public directory numbers can be programmed.
In addition the number type has to be specified.

Type of number:

- Subscriber — The prog. digits contain the public subscriber number.
- National — The prog. digits contain the public destination code and the subscriber number.
- International — The prog.digits contain the country code, public destination code and subscriber number.
- Unknown — Only direct indialling digits are programmed.
- Network specific — The content of the digits programmed depends on the respective network operator.

The descriptions of commands provided below are brief and state a handling program for the programming of trunk lines.

Recommended programming sequence for trunk line data:

- Program one route at a time.
- Program one line in the route and copy its data to the other lines in the route
- Repeat the procedure for the other routes.

5605-5607 Number series:

Via these commands it is possible to alter the number series for individual line positions or for all trunk lines.

5605
Assign directory number to the line position

5606
Change directory number for individual trunk line

5607
Assign all trunk lines a new number series

1601 - 1613 Transmission parameters:

The following commands can be set for both analogue and digital trunks

1601
CEPT-DTMF tone receiver level (dBm0)

Detection level for the DTMF-tone receiver

1602
ETOE-DTMF tone reveiver level (dBm0)

Detection level for DTMF-tone receiver at DISA-trunk.

1603
Dial tone receiver level (dBm0).

1604
MFC-tone receiver level (dBm0)

1605
MFC tone sending level (dBm0).

1612
Transmission group 0 - 7

Each analogue trunkline can also be programmed for the following parameters:

1606
Disconn. tone receiver level (dBm0)

1607
Call meter type

Type of call metering receiver 12/16kHz

1608
Call meter receiver level

1609
Impedance adaptation

1610
Relative sending level(dBr)

1611
Relative receiving level(dBr)

1613
Relative transmission level for DTMF

1001-1008 Trunk categories:

See also CATEGORISATION,
document 149/155 34-ASB 150 02 Uen.

Whether the categories of the trunk lines shall be altered from initial (default) data is stated below:

1001
Facility COS

Initial data = 0

1002
Traffic group

Initial data = 0

1003
TCD day COS

Initial data = 0

1004
TCD night COS

Initial data = 0

1005
Common short no COS

Initial data = 0

1006
Callback allowed ?

Initial data = Y

1007
Intrusion on trunk line permitted

Initial data = Y

1008
Camp on answer postion ?

Initial data = Y

Night service:

See also NIGHT SERVICE,
documnet 362/155 34-ASB 150 02 Uen.

1019
Night switching trunk group

Initial data = 1.

Name string:

See also TELEPHONE DIRECTORY,
document 481/155 34-ASB 150 02 Uen.

Outgoing traffic

Line signalling

1201
Line signal scheme

States which line signal diagram shall apply for the trunk line.

1013
Dial tone to extension?

Dial tone supplied to the calling party?

For outgoing calls. Inital data = YES

1014
Result tone to PE.

Result tone sent to the superior exchange?

Initial data = YES

1034
Public dial tone to extension

The command is used to state whether or not the public dial tone has to be used (no dial tone from the public exchange available for an outgoing call).

The parameter programmed by this command is relevant only if dial tone to extension is activated by superior command 1013.

1307
PTS-signal from PE?

Superior exchange supplies dial tone?
Initial data = YES

1308
PTS-signal from PE = dial tone

PTS-signal comprises dial tone?
Initial data = YES

1404
Wait time before start to send digits when no PTS.

If the superior exchange does not supply dial tone the time before digit transmission may commence is stated here.
Initial data = 2s

Register signalling

1302-1306, 1312
Outgoing decadic signalling

The following commands are programmed if decadic signalling shall be used.

Decadic signalling

1302
Outgoing digits transmission.

Select Decadic (=0)

1303
Impulse type

Relationship digit/number of pulses. Initial data =

International rotary dial

1304
Impulse frequence

Pulse speed. Initial data = 10 Hz

1305
Impulse ratio

Make/break ratio. Initial data = 40/60

1306
Interdigit pause.

Initial data = 800 ms

DTMF-signalling

1302
Outgoing digit transmission

Select DTMF-signalling (=1)

Digital link parameters

The following commands are valid for all configured ISDN system connections.

2060
Consolidation time from alarm to OK

The system continuously monitors the existing ISDN connections. In case that one ISDN connection fails of undefined reasons, an internal alarm will be raised. Command 2060 states for how long the ISDN connection has to work correctly again in order to cancel the alarm condition.

Values: 0 - 255 sec

2061
First priority link to be master for synchronisation

2062
Second priority link to be master for synchronisation

2063
Third priority link to be master for synchronisation

2064
Fourth priority link to be master for synchronisation

2065
Fifth priority link to be master for synchronisation

Commands 2061-2065 state which digital interface (board position / individual link) shall be used first for synchronisation and which others shall be used if the first one fails. If a synchronisation source is defined, and connected to cooperating exchange, ASB150 02 acts as "slave" and always takes over the clock of the "master". This synchronisation strategy is designed for 5 different sources. If no BTU-D/BTU-B is stated for synchronisation, the internal system clock will be the master. This is used in case of a tie line configuration.

In a tie line configuration always one PBX has to be configured as "master" and the other one as "slave"

Is the system connected to the public net, it always acts as a slave and takes over the clock from the public net.

Using the following two commands the times for tone/ pause for DTMF-transmission can be adjusted. The times are common for all trunk lines:

2613
DTMF time (ms)

Time for tone sending

2614
DTMF pause (ms)

Time for pause

MFC-signalling

1302
Outgoing digit transmission

Select MFC/MFE =2

1312
MFC-signal scheme

Select MFC/MFE-signalling scheme. Inital data=00 (Standard MFC R2)

Monitoring times

The time between digits for outgoing digit transmission can be set. After a certain number of digits a shorter monitoring time can be connected.

1401-1407 Monitoring times.

1401
No of digits with long dial supervision

Maximum number of digits before short time.
Initial data = 4 digits

1402
Time for long supervision time of external digits

Long monitoring time. Initial data = 30s

1403
Time for short supervision time of external digits

Short monitoring time. Initial data = 8s

1405
Wait time before metering is stopped

Time for last meter pulse. Initial data = 000ms

1406
Wait time before ringback/rerouting at not answered calls

States time before call is diverted. Initial data = 60s

1407
Maximum hold time

Time for forced release

States time before a call parked for common access that cannot be diverted is disconnected.
Initial data = 5s

1408
Minimum speech time for not increasing disturbance counter

States shortest conversation time in order to increment fault counter. Initial data = 30s

1409
Time for recall on transfer before answer

States time before the call that was transferred before answer recalls that initiated the party transfer.
Initial data = 60s

1410
Time for recall on camp on

States time before a camped on call recalls the party that initiated the camp on.
Initial data = 60s

1414 - 1416 Detection and blocking times

For these commands it is possible to set the desired time. If the tine is set at 0 (initial data) the programmed signal table will apply.

1414
Length detection 1:st PTS

Detection time for 1st dial tone. Initial data= 08

1415
Lenght detection 2:nd PTS

Detection time for 2nd dial tone. Initial data= 08

1416
Blocking time for outgoing call after disconnection.

Initial data=01

Time for outgoing traffic after terminated incoming call.

1419
Minimum supervision time between ringsignals

Time between ringsignals for disconnection of ananswered calls.

Several routes

1015
Pre-digits for TCD and LCR

Here are stated a number of predigits where several routes have number series with identical numbers
Initial data = 0

See also TRUNK CALL DISCRIMINATION, document 487/155 34-ASB 150 02 Uen.

All incoming traffic

1101 - 1104 Answer positions

See also
ANSWER POSITION(S) FOR TRUNKS,
112/155 34-ASB 150 02 Uen.

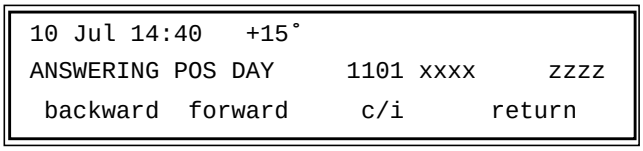
1101 - 1104
Programming of answering positions

On system start all trunks are directed to directory number 200.

Four different answering positions can be programmed for each trunk:

- Answering position, day = 1101
- Answering position, night = 1102
- Alternative answering position, day = 1103
- Alternative answering position, night = 1104

A call is directed to an alternative answering position when the normal answering position does not answer within a predetermined time



xxxx Enter directory number of relevant trunk

zzzz Enter directory number of relevant answering position.
Default data = 200

Step to commands 1102 - 1104 and repeat above procedure.

1109
Common voice announcement interruptable

This command states weather the alerting on the answering/reroute position shall start at the same time as the common trunk announcement or not.

valid data NO Common announcement is not interruptable (default data)

YES Common announcement is interruptable

NOTE: If this command is set to YES and the called party answers the call, the common voice announcement will be interrupted:

Direct indialling

DID using MFC-R2

1301
Incoming digit transmission

= 2 (MFC/MFE)

1312
MFC-signal scheme.

1023
Trunk line type

Select 1.

1309
PTS signal to PE = dial tone

Dial tone to superior exchange
Whether dial tone shall serve as PTS-signal for incoming traffic is stated here.
Initial data = YES

1311
Number of digits before EOS-signal

States that a fixed number of digits shall be received before the EOS- signal is sent to the superior exchange.

DID-SimplifiedDISA-type

1024
Simplified DISA at day

Indialling when the system is in day mode

1025
Simplified DISA at night

Indialling when the system is in night mode

1009 - 1017 Diversions

Programmed only for direct indialling and concerns whether calls shall be diverted in the following circumstances.

1009
Rero on answer pos barred?

The number is barred

1010
Rero on answ pos blocked ?

The number is blocked

1011
Rero on answ pos vacant

The number is vacant

1012
Rero on answ pos busy ?

The number is busy

1016
Reroute on no answer

The number does not answer

1017
Reroute on to few digits ?

Incomplete number has been dialled

1411 - 1413 Time monitoring

1411
Time superv. for 1:st digit at automatic inc. traffic

Initial data = 8s

1412
Time superv. between digits at automatic inc. traffic

Time monitoring for reception of subsequent digits
Initial data = 8s

1413
Time for superv. of answer at automatic inc. traffic.

Time before diversion to alternative answer answer position on no reply.
Initial data = 30s

Operator calls

1801
Incoming common number at automatic incoming traffic

The command is used to state the incoming number that shall be translated to the answer position for the line.
Furthermore this number is used to build up the public number that is sent out to the line as A (calling) or B (called / connected) number in cases where the internal number is not subscribed in the PSTN-net.

valid data: 1 - 4 digits

EXAMPLE:
Digits 000 are received from the line, which means that the call shall go to the answer position for the line (Operator) in accordance with command 1103 and 1104. The special analysis in accordance with commands 1801 and 1803 is needed as digit 0 is used internally in the exchange.
Assume the extension number series consists of a 3-digit number beginning with digit 2 and from the line a 3-digit number beginning with the digit 0 is received.

In that case following settings are required:

1803	1	Remove leading digit
1802	2	Add the digit 2 to the remaining part of the received number
1801	200	Incoming common number which should call the answer position programmed with commands 1103 (day time) and 1104 (night time)

1802
Predigits at automatic incoming traffic

To be programmed if the system is to add digits to those digits that come from the public exchange

1803
Irrelevant digits at automatic incoming traffic.

To be programmed if one or more of the first digits that come from the public exchange is/are to be ignored

Digital trunk

1901
CRC-4 alarm conditions

Automantic Trunk Impedance Adaption

1032
Trunk Impedance Adaption

To activate this feature set the command to:

YES (automatic trunk impedance enabled)
NO (automatic trunk impedance disabled)

default value: NO

1033
Impedance Adaption Transit

To activate this feature set the command to:

YES (automatic impedance adaption transit enabled)
NO (automatic impedance adaption transit disabled)

default value: NO

Equipment

BTU-A , BTU-D or BTU-B board.

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SEA/EBBMP M.Plattner	SEA/EBBX/E	521/155 34-ASB 150 02 Uen	
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SEA/EBBMP		99-07-15 / G	ASB 150 02
		Database reference	
		521.fm	

VOICE MAILBOX, EXTERNAL

Definition

An external PC based voice server, e.g. DiscoVoice 5000, can be connected to ASB 150 02.

An analogue extension board is used for connection.

Signalling utilises DTMF.

Use

An external voice server can be used for several applications.

Below is described solely how a peripheral voice storage system can be connected to ASB 150 02.

For functionality regarding the connected voice system, see user guide for the peripheral equipment.

An extension user can divert calls from her/his telephone to her/his voice mailbox.

On arrival of an incoming call to the extension, the system will divert the call to the directory number of the PBX-Group to which the peripheral voice mailbox is connected.

Using DTMF, the system will then also transmit the called extension's directory number.

In this manner the caller gains connection to the extension's mailbox.

Operation

System Telephones

Indication that message is waiting

When a message exists in the voice mailbox, the lamp of the programmed key lights and flashes rapidly.

Retrieving from the voice mailbox

A call is initiated by pressing the programmed key.

If all connections are busy, busy tone will be heard.

When the last stored message in the mailbox has been erased, the relevant lamp on the telephone extinguishes.

Message waiting indication within a CN

The feature CN ’message waiting indication’ is based on the usage of ISDN supplementary service UUS for supporting proprietary CN functionalities in ASB15002.

The usage of a centralised voice mailbox is based on the proprietary CN services line identification and call diversion.

The centralised voice mailbox can only be located in an ASB 501 node.

For more information regarding Corporate Networking, see NETWORKING, document 365/155 34-ASB 150 02 Uen.

Capacity / Limitatons

The capacity of the voice storage unit and the number of concurrent connections is determined on the basis of the prerequisites for the voice storage system.

ASB 150 02 must possess the same number of analogue extension positions as number of ports in the voice storage system.

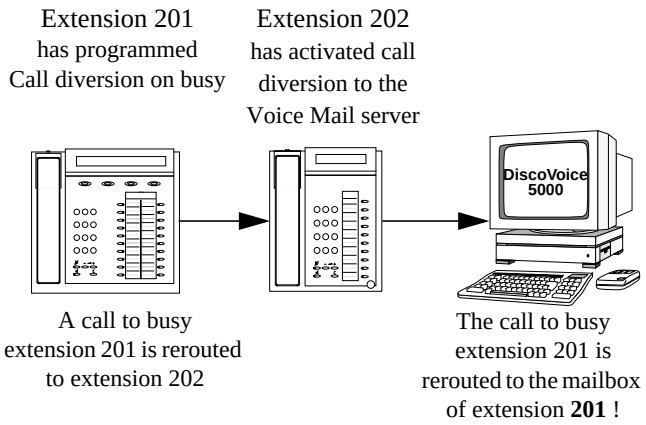
From the traffic aspect the connections of the voice mailbox should be distributed among several ELU-A boards for systems with heavy traffic.

System Telephones can have a lamp for a voice mailbox.
To turn on and off the message lamp on a system telephone the following DTMF-codes are used and which the connected voice system must be capable of sending.

Turn on lamp: ***92*** directory number #

Turn off lamp: **#92*** directory number #

Diversion philosophy



Programming

Programming for the Voice Mail server

0301
Program lamp on the telephone

Each digital extension user to be connected to the voice mailbox shall program a key to indicate whether messages exist.

```
10 Jul 14:40   +15°
FUNCTION OF KEY       0301 xxxx yy    zz
 backward  forward     c/i      return
```

xxxx	Enter extension's directory number
yy	Enter relevant key
zz	Enter function = 34

Following commands are only accessable via RASC:

5402
Create PBX group

The analog extension numbers connected to the voice mailbox are placed in a vacant group for group hunting.

3401
PBX-members dir.no

Enter group members (= Extensions connected to the Voice mail system)

3071
Indication of external voice message?

An external mail system can be connected to ASB 150 via an analogue extension interface. By sending special DTMF-codes to ASB 150 the system can indicate whether or not an extension has an unanswered message. Other extensions shall not be able to alter the indication by using the same codes.

This command is used to state for which A-category/ categories it is permitted to alter the indication that an extension has a message in an external message system.

2023
External voice mail number

Number to call the external voice mail system.

An external voice mail system can be connected to ASB 150 via an analogue extension board or via proprietary networking functionality. A programmable key can be defined for the external voice mail function. The LED associated with the key will indicate a message to the extension.

Press the key to listen to the message. By pressing the key a call is made to the voice mail system. This command is used to define the number to be called.

If the external voice mail system is connected via an analogue extension board the number to be called is the number of the analogue extension connecting the voice mail system. If the external voice mail system is connected via more than one extension line, a PBX-group should be created. The PBX-group should be programmed to contain all extension lines used to connect the voice mail system, and this command should specify the number of the PBX-group.

If the external voice mail system is connected via a proprietary private network, the number to be called is the private network number of the external voice mail system located in another PBX.

Valid data: up to 8 digits

Default data:-

0125
Voice mail extension?

This command must be set to YES for analogue extension positions used for connecting to an external voice server.
This is for sending DTMF tones to give the information which extension is diverted to the Mailbox system.

0143
Line break for ELU-A

With this command you can state the duration of a line break.
Valid values for this command are 0 - 255.

The value zero indicates no line break.

Set value to 20 for sending Loop break to Voice Mail server.

Programming for Automated Attendant

0121
DTMF to own telephone

There exist peripheral (external) units that can be connected to an extension position and be controlled by DTMF-tones.

This command is used to determine whether digits dialled by the call partner can be transmitted as DTMF-tones to the connected unit.

Set this command to YES.

0125
Voice mail extension?

This command must be set to NO for analogue extension positions used for Automated Attendant.

0143
Line break for ELU-A

With this command you can state the duration of a line break.
Valid values for this command are 0 - 255.

The value zero indicates no line break.

Set value to 0.

Programming for CN

2071
Information system identity (ISID) for external voice mailbox

This command defines the Information system identity (ISID) of the external mailbox system, which is located in an ASB 501 node.

Valid data:	0-99	programmed
	-	not programmed
Default data:	-	not programmed

Equipment

ELU-A board for connection of the external voice server.

VOICE MESSAGE

Definition

Voice message denotes any recorded message, digitally stored on the optional board VMU-D / -HD.

Six separately recorded voice messages can be assembled into one voice answer.

The sequence of voice messages in an assembled voice answer is determined via a command.

Voice messages are stored on VMU-D / -HD boards.

Use

Recorded voice messages can be used in several contexts in ASB 150 02.

Voice information

Prerecorded absence information with date and time, or information recorded by the user himself.

See also INFORMATION,
document 263/155 34-ASB 150 02 Uen.

Voice messaging

Message recorded by the user that is sent to a stated recipient.

See also MESSAGE SYSTEM,
document 341/155 34-ASB 150 02 Uen.

OPERATOR answer

Recorded voice answer that is supplied each time the OPERATOR answers an external call.

Each OPERATOR can be assigned one voice answer.

See also OPERATOR,
document 380/155 34-ASB 150 02 Uen.

Voice message for OPERATOR queue

A recorded voice message that is supplied after a programmable time to external callers if the OPERATOR is busy.

See also OPERATOR,
document 380/155 34-ASB 150 02 Uen.

Queue message for ACD-queues

Two different voice answers can be recorded for each ACD-queue. The queue message may also state the expected waiting time or the position in the queue.

A voice message for each queue can also be supplied when an agent answers a presented call (greeting).

Additionally the individual greeting can be recorded for each agent. This voice announcement then will be played each time the agent persses the answer-key to answer an incoming call.

See ACD-VOICE MESSAGE,
document 105/155 34-ASB 150 02 Uen.

Telephone answering machine

Recorded voice answers can be assigned a directory number and be used as telephone answering machine for external or internal calls, for example for night service.

Hotel wake-up

In hotel systems the guest can receive acknowledgement of an ordered wake-up time.

Also the ordered wake-up time can be recorded.

Both wake-up acknowledgement and wake-up message can be recorded in up to three different languages.

See HOTEL WAKE-UP FACILITY,
document 241/155 34-ASB 150 02 Uen.

Voice message in conjunction with reminder

When an ordered reminder calls the ordering party and the latter answers, a recorded message can be played back.

The voice message is common for all reminders.

See also REMINDER SERVICE, document 442/155 34-ASB 150 02 Uen..

Operation

Voice answer with directory number can be used for example as a telephone answering facility.

As these voice answers have directory numbers, calls can be night-switched or diverted to these messages.

When a call arrives a voice message will be repeated twice whereafter congestion tone is supplied.

Capacity

The number of voice messages is limited by available capacity on the voice memory board VMU-D / -HD.

For storage capacity of each VMU-D/ -HD for normal and high quality:

see document 1551-ASB15002.

The number of voice messages with optional contents is limited to 32 on VMU-D and to 64 on VMU-HD.

Several VMU-D / -HD boards can be mounted, if expanded storage capacity is required.

For voice messages with optional contents these must be stored on one board.

Voice information and voice messages can be stored on an optional number of boards.

It is possible to store up to 16 general voice answers assembled into a single voice message.

Limitations

Individual VMU-D / -HD boards can be programmed so that they can only be used for one of the following functions.

- Voice information
- Voice message
- Voice answer

The number of concurrent recordings / playbacks on a VMU-D / -HD board is limited to 16.

The feature "Individual greeting per agent" in the ACD-package asks the use of the VMU-HD because of the 255 voice announcements possible to be recorded in this feature.

A voice answer that is coupled to a directory number cannot be supplied to more than one caller at a time. It is essential therefore not to use long voice answers in conjunction with heavy traffic as this can lead to waiting times.

Programming

Create voice answers.

Each form of voice message is built up in the same way.

Recording the included voice messages

- The different parts (maximum 6) of a voice answer are recorded separately.
- The different voice messages are assembled into one voice answer.
- The assembled voice answer is coupled to the function, e.g. a directory number.

Voice answers for different functions

The order for the creation of voice messages is provided below.

Voice answer with directory number

4401 Record the voice messages to be utilised

4701 Couple the recorded voice messages to one assembled voice answer

Voice answer for ACD-queue

4401 Record the voice messages to be included in voice answers 1 and 2

3901 State which two voice messages are to be used for voice answer 1

3902 State which two voice messages are to be used for voice answer 2

3826 State whether or not the individual greeting per agent will be sent to the ACD-callers.

4425 Record the individual greeting per agent.

Voice message for OPERATOR answer

4401 Record the various voice messages to be used for the OPERATORs' voice answers

4102 State which voice message is to be used for OPERATORs 0 - 2

Voice message for OPERATOR-queue

4401 Record the voice message to be used as queue message.

4007 Couple recorded queue message to function OPERATOR queue.

Voice information

Record the voice messages in the following order.

The system connects the various voice messages automatically in accordance with command 4502 that states whether it is a matter of date or time.

4402 Record information texts 1 - 7

4403 Record months 1 - 12

4404 Record calendar days 1 - 31

4405 Record hours 0 - 23, Language 1

4406 Record the 5-minutes periods, Lang. 1 00, 05, 10, 15, 20, 25, 30, 35, 40, 45, 50,55.

4407 Record hours 0 - 23, Language 2

4408 Record the 5-minutes periods, Lang. 2

4409 Record hours 0 - 23, Language 3

4410 Record the 5-minutes periods, Lang. 3

Hotel wake-up acknowledgement

Each wake up acknowledgement needs to be created with one voice answer for each language.

Hours and 5-minutes periods for language 1 need only be recorded if this has not been done previously for information.

4401 Record the voice messages to be used as wake-up acknowledgement

8008 - 8011 State which languages are to be used

8015 - 8017 State for each wake-up acknowledgement if a time indication is to be supplied

4405,4406 Record hours, minutes for language 1

4407,4408 Record hours, minutes for language 2

4409,4410 Record hours, minutes for language 3

Hotel wake-up message

Each wake-up message must be assigned a directory number to which a voice message is coupled.

Create directory numbers for the various messages:

4401 Record the voice messages to be used as wake-up messages

4701 Combine recorded voice message to created directory number

8009 - 8011 State which languages are to be used

8012 - 8014 Combine the created directory numbers to the respective wake-up messages

Length and quality of voice answer with directory number

4307
High anno quality

It is possible to select high quality or lower quality.

```
10 Jul 14:40   +15°
HIGH ANNO QUALITY     4307            z
```

z — State desired quality:
Y = High quality.
N = Normal quality (default data)

4301
Max time for speech messages

The voice messages are not time-restricted.

It is possible to program a maximum time.

```
10 Jul 14:40   +15°
MAX TIME SPCH MESS    4301          zzz
 backward  forward     c/i      return
```

zzz — Enter number of seconds (0 - 255).
Default value 12 seconds.

4303
Length of voice reference

This command is used to determine the maximum length of a recorded voice message.

```
10 Jul 14:40   +15°
MAX TIME SPCH ANNO    4303          zzz
```

zzz — Enter required time (0 - 255 seconds),
Default data = 12.

Assembly of voice messages to form voice answer.

4701
Assemble voice messages

This command is used to assemble several recorded voice messages to a previously created directory number for voice answer

```
10 Jul 14:40   +15°
VOICE ANSWER REF.     4701    xxxx      y
 backward     forward     c/i      return
```

xxxx — Enter directory number of voice answer

y — Voice message's sequence number 0 - 2

```
10 Jul 14:40   +15°
GROUP NO:                              uu
ORDER NO:                             vvv
```

uu — type of voice message (announcement group); default value =00

vvv — sequence number of the selected type (default value =000)

uu	vvv	
01	1-32	voice messages; command 4401
02	1-7	information texts; command 4402
03	1-12	months; command 4403
04	1-31	days; command 4404
05	0-23	hours-language 1; command 4405
06	0-11	5-minute periods-language 1; command 4406
07	0-23	hours-language 2; command 4407
08	0-11	5-minute periods-language 2; command 4408
09	0-23	hours-language 3; command 4409
10	0-11	5-minute periods-language 3; command 4410
11	1-42	Automated Attendant; command 4411
12	0-14	message prompts-language 1; command 4412
13	0-6	message prompts-language 2; command 4413
14	0-6	message prompts-language 3; command 4414
15	0-31	welcome individual; command 4415
16	0-15	retrieving individual; command 4416
17	0-15	welcome common; command 4417

18	0-15	retrieving common; command 4418
19	0-9	digits-language 1; command 4419
20	0-9	digits-language 2; command 4420
21	0-9	digits-language 3; command 4421
22	0-2	common voice prompts; command 4422
23	0-9	DISA voice prompts
24	0-63 for VMU-HD or 0-31 for VMU-D	announcements for trunks; command 4424
25	1-255	Individual greeting per ACD-agents; command 4425.

4603
Block board for voice answer

It is possible to determine whether a certain VMU board may be used for voice answer or not.

```
10 Jul 14:40   +15°
REC ANNO ALLOWED ?    4603 xxyy        z
 backward  forward     c/i      return
```

xxyy — Enter board position (01 - 63) and 00

z — Enter relevant function:
Y = Voice answer may be stored on board
N = Voice answer may not be stored on board.

Name of call number to voice answer

See also TELEPHONE DIRECTORY, document 481/155 34-ASB 150 02 Uen.

4401 - 4410
Recording of voice messages

These commands are used to record various voice messages that can then be used for voice answer and voice information.

The following description is common for all commands in this group

```
10 Jul 14:40   +15°
VOICE ANNO 1-32       4401            >
                                    return
```

Press **Enter**

```
10 Jul 14:40   +15°
ANNO NO:                              xx
                                    return
```

xx — Enter number 1 - 32 of voice message

Press **Enter**

```
10 Jul 14:40   +15°
ANNO NO:
rec       play-back      erase     return
```

rec = Recording

play = Playback

erase = Erasure of recording

return = Return to previous image.

Recording

Press **record**.

Record voice message

```
10 Jul 14:40   +15°
RECORDING
play-back      pause     erase     return
```

Play-back

Press **play** to listen to voice message

```
10 Jul 14:40   +15°
PLAY BACK
play-back      pause     erase     return
```

Make a pause in recording

Press **pause** to make a pause in recording or playback.

Renewed depression of **pause** restarts recording or playback

```
10 Jul 14:40   +15°
PAUSE AT RECORDING
rec       play-back      erase     return
```

4425
Record individual greeting per ACD-agent

Change to the programmnig mode and enter the command 4425.

The display shows:

```
10 Jul 14:40   +15°
ACD ANNO   1-255        4425            >
backward         forward          returns
```

Press ENTER

```
10 Jul 14:40   +15°
ACD ANNO NO:                          xxx
                                    return
```

xxx	enter the reference number of the individual greeting anoumcement for the agent that has to use the same number as agent number during log-on procedure.
return	moves one step backward

Press ENTER after entering the reference number.

```
10 Jul 14:40   +15°
ACD ANNO    1-255        4425          xxx
rec      play-back       erase      return
```

Now you can start recording of the selected voice announcement; or you can play-back, erase an existing voice announcement.

Equipment

The function requires one or more VMU-D / -HD board(s).

Uppgjord/Prepared	Faktaansvarig - Subject responsible	Dokumentnr/Documentnr	
SEA/TB/MP S.Caushi	SEA/TB/XE	523/155 34-ASB 150 02 Uen	
Dokansv/Godkänd - Doc respons/Approved	Kontr/Checked	Datum/Date / Rev	Tillhör/Referens-File/Reference
SEA/TB/MP		98-01-28 / B	ASB 150 02
		Database reference	
		523.fm	

VOICE MESSAGE BEFORE ANSWERING

Definition

If external calls, even those with DID to an extension, are routed to the answering/reroute position of the relevant trunk they will receive voice announcement at first and then Music on Hold (if programmed) or ring tone until the speech connection is established. This function is valid irrespective of telephone types (OPERATOR, or a simple extension).

Use

These voice messages can be recorded by the users themselves.

External callers will be supplied with two different voice announcements depending on the answering/reroute position's state. For a free trunk's answering/reroute position the external caller receives common voice announcement; for a busy position he receives first common voice announcement and then busy voice announcement.

When a DID call rings at a certain extension and nobody answers, the call will be routed after the trunk reroute time-out to the trunks answering/reroute position (extension). The caller will hear a corresponding voice announcement (depends on trunk answering/reroute extension's state) and **both extensions will ring until the call is answered** (the logic of time-out is also active).

In several countries it isn't allowed to answer incoming calls with a voice answer immediately. A certain delay time has to be passed before the exchange is allowed to answer the call. For more information see DELAYED AUTOMATIC ANSWER,
document 160 / 155 34 - ASB 150 02 Uen.

Operation

If many simultaneous voice announcements need to be played (many external callers at the same time) and no voice channel is free, a logic timeout of 6 seconds is applicable. If time out exceeds the corresponding trunk cancels the request and sends ring tone or Music on hold (if programmed) until the call is answered.

If trunk answering/reroute extension answers the external call before the whole busy voice announcement has been played, the current trunk interrupts the voice announcement and establishes the speech connection between the parties immediately.

For the common voice announcement it is programmable if the alerting on the answering/reroute position shall start at the same time as the voice announcement or after the voice announcement has been played. In the first case the common voice announcement is interruptable in the second one not. The busy voice announcement can always be interrupted.

If the answering/reroute position is an ACD- or Operator queue, the caller will not receive the busy voice announcement of the trunk answering/reroute position. He will receive the ACD- or Operator queue announcements instead and then Music on hold (if programmed) or ring tone until the call is answered.

NOTE:

If no voice announcement is played, you usually will be in one of the following situations:

- reference of the announcement group has not been specified, or
- voice announcement has not been recorded, or
- VMU-card is missing or there are other VMU-card problems, or
- the trunk answering/reroute postion is not specified.

Capacity

For the VMU-HD or VMU-D board storage capacity see “Printed Board Assemblies” chapter in SYSTEM OVERVIEW.

VMU-HD offers up to 64 trunk voice references and VMU-D offers up to 32.

See also under CAPACITY-paragraph of the Facility description VOICE MESSAGE,
document 522/155 34-ASB 150 02 Uen.

Limitations

In systems equipped with VMU-D or VMU-HD the number of simultaneous calls served by voice functions depends on the number of VMU-D / VMU-HD channels.

See also under LIMITATIONS-paragraph of the Facility description VOICE MESSAGE,
document 522/155 34-ASB 150 02 Uen.

Programming

1105
Common voice announcement at day

This command is used to specify the reference number of the common voice announcement at day time.

1106
Common voice announcement at night

This command is used to specify the reference number of the common voice announcement at night.

1107
Busy voice announcement at day

This command is used to specify the reference number of the busy voice announcement at day time.

1108
Busy voice announcement at night

This command is used to specify the reference number of the busy voice announcement at night.

1109
Common voice announcement interruptable

This command states whether or not the alerting on the answering/reroute position shall start at the same time as the common trunk announcement.
If the call is answered during simultaneous ringing and voice announcement, the voice message is interrupted.

Valid data: YES / NO
Default data: NO
Alerting on the answering/reroute position starts after the common trunk announcement has been finished.

Following command is only accessible via system telephone:

4424
Announcements for trunks

Via this command you can record / play / erase voice announcements concerning trunks.

```
10 Jul 14:40   +15°
TRUNK ANNO:  0-63          4424          >
backward   forward                    return
```

In systems equipped with VMU-HD (VMU-D) it is possible to record voice announcements for up to 64 (32) trunks.

Press ENTER

```
10 Jul 14:40   +15°
TRUNK ANNOUNCEMNET NUMBER:                xx
                                        return
```

xx	enter the reference number of the voice announcement you want to record / play / erase.
return	turns one step backward
NOTE:	For more information regarding "Reroute option" see Facility description TRUNK, document 486/155 34-ASB 150 02 Uen.

Equipment

This function requires VMU-D or VMU-HD.